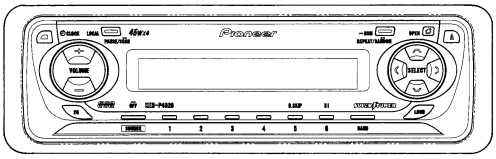
Pioneer sound.vision.soul

Service Manual

KEH-P4020/XM/UC



ORDER NO
CRT2763

MULTI-CD CONTROL HIGH POWER CASSETTE PLAYER WITH FM/AM TUNER

KEH-P4020 XM/UC
KEH-P4022 XM/EE
KEH-P4025 XM/ES

● This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-1011	CRT2406	3L	Cassette Mech. Module:Mech.Description, Disassembly, Adjustment

NOTE:

● **This service manual does not describe the CD test mode.**
For the operations in the CD test mode, refer to the CD player's Service manual.

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8. OPERATIONS AND SPECIFICATIONS 42

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1. SAFETY INFORMATION

● KEH-P4020/XM/UC

CAUTION

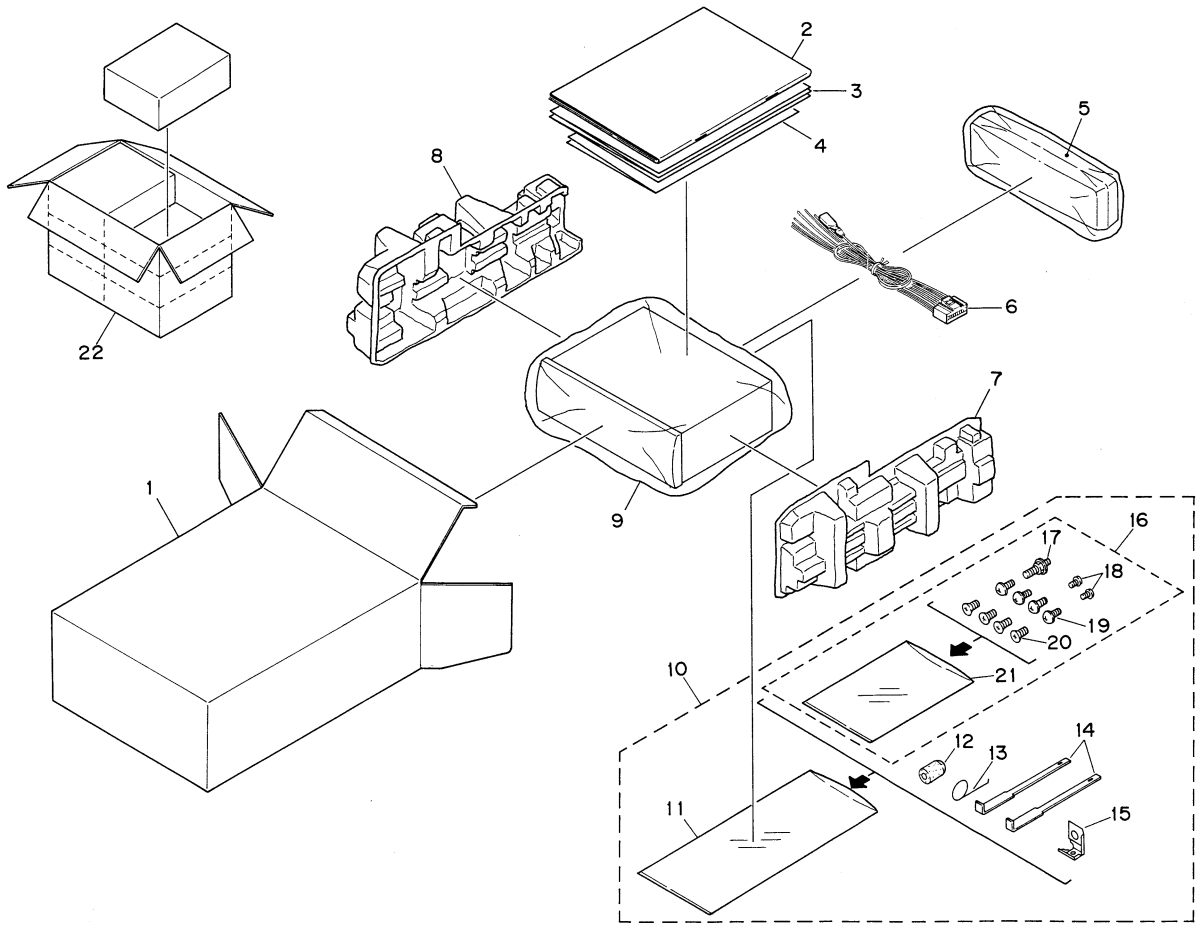
**This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.**

WARNING

**This product contains lead in solder and certain electrical parts contain chemicals which ar
California to caruse cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65**

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



NOTE

● Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.

● **PACKING SECTION PARTS LIST**

KEH-P4020/XM/UC

Mark	No.	Description	Part No.
	1	Carton	CZH5581
	2	Owner's Manual	CZR2944
	3	Installation Manual	CZR2945
*	4	Card	ARY1048
	5	Case Assy	CXB3520
	6	Cord Assy	CZD2976
	7	Protector	CZH5591
	8	Protector	CZH5592
	9	Polyethylene Bag	CEG1173
*	10	Accessory Assy	CZE2956
*	11	Polyethylene Bag	CZE2908
	12	Bush	CNV3930
	13	Spring	CBH1650
	14	Handle	CNC5395
	15	Holder	CNC9450
*	16	Screw Assy	CZE2957
	17	Screw	CBA1002
	18	Screw	BPZ20P060FZK
	19	Screw	TRZ50P080FMC
	20	Screw	CRZ50P080FMC
*	21	Polyethylene Bag	CEG-127
	22	Contain Box	CZH5582

KEH-P4022/XM/EE

Mark	No.	Description	Part No.
	1	Carton	CZH5585
	2	Owner's Manual	CZR2948
	3	Installation Manual	CZR2949
	4	Warranty Card	CRY1157
	5	Case Assy	CXB3520
	6	Cord Assy	CZD2976
	7	Protector	CZH5591
	8	Protector	CZH5592
	9	Polyethylene Bag	CZE2903
*	10	Accessory Assy	CEA3062
*	11	Polyethylene Bag	CZE2908
	12	Bush	CNV3930
	13	.....	
	14	Handle	CNC5395
	15	Holder	CNC9450
	16	.....	
	17	Screw	CBA1002
	18	Screw	BPZ20P060FZK
	19	.....	
	20	.....	
*	21	.....	
	22	Contain Box	CZH5586

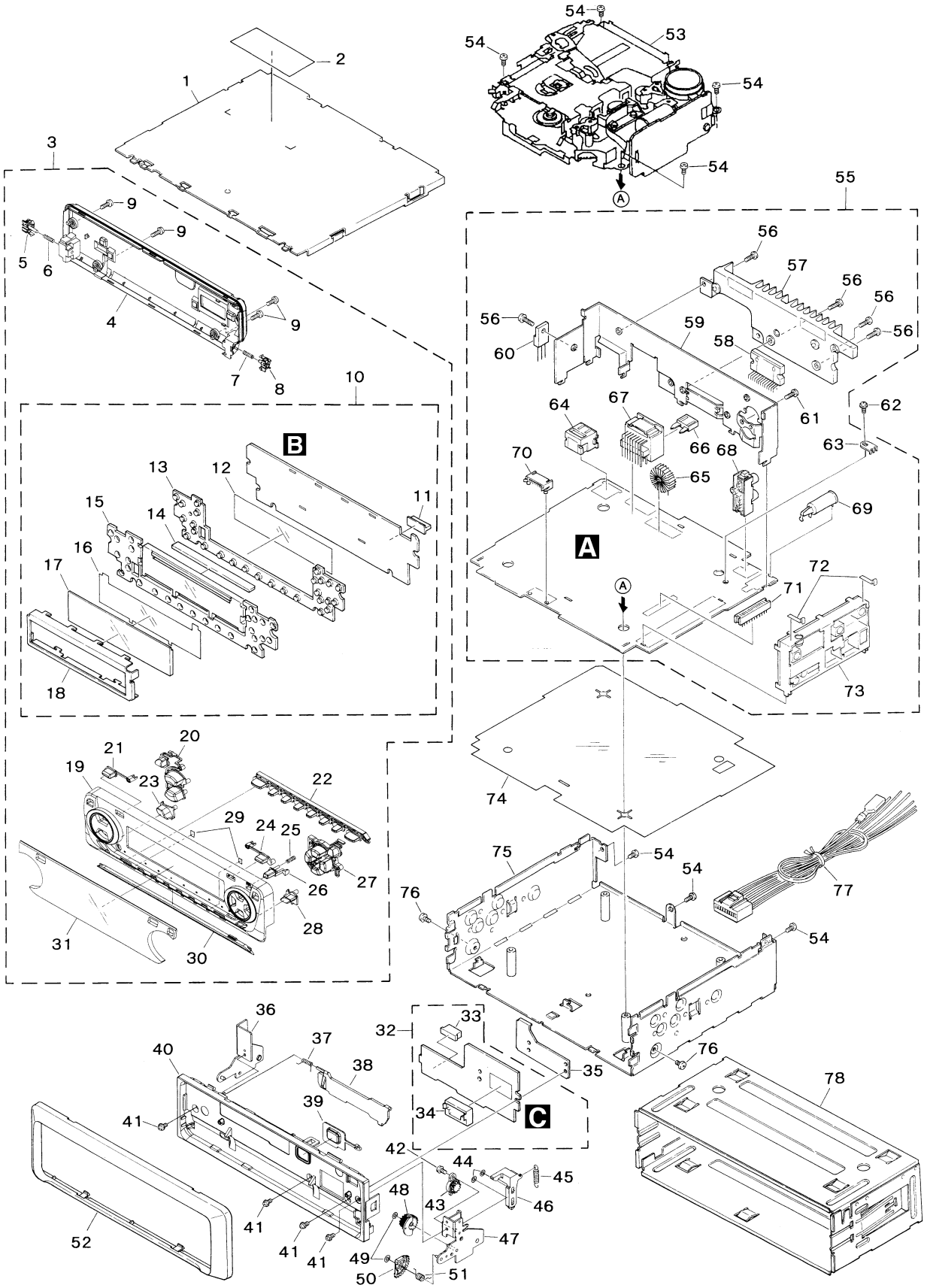
KEH-P4025/XM/ES

Mark	No.	Description	Part No.
	1	Carton	CZH5583
	2	Owner's Manual	CZR2946
	3	Installation Manual	CZR2947
	4	.....	
	5	Case Assy	CXB3520
	6	Cord Assy	CZD2976
	7	Protector	CZH5591
	8	Protector	CZH5592
	9	Polyethylene Bag	CZE2903
*	10	Accessory Assy	CZE2955
*	11	Polyethylene Bag	CZE2908
	12	Bush	CNV3930
	13	Spring	CBH1650
	14	Handle	CNC5395
	15	.....	
	16	Screw Assy	CZE2953
	17	Screw	CBA1002
	18	.....	
	19	Screw	TRZ50P080FMC
	20	Screw	CRZ50P080FMC
*	21	Polyethylene Bag	CEG-127
	22	Contain Box	CZH5584

Owner's Manual,Installation Manual

Part No.	Language
CZR2944	English, French, Spanish
CZR2945	English, French, Spanish
CZR2946	English, Spanish, Portuguese(B), China, Arabic
CZR2947	English, Spanish, Portuguese(B), China, Arabic
CZR2948	English, Russian
CZR2949	English, Russian

2.2 EXTERIOR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A
B
C

(1)EXTERIOR SECTION PARTS LIST

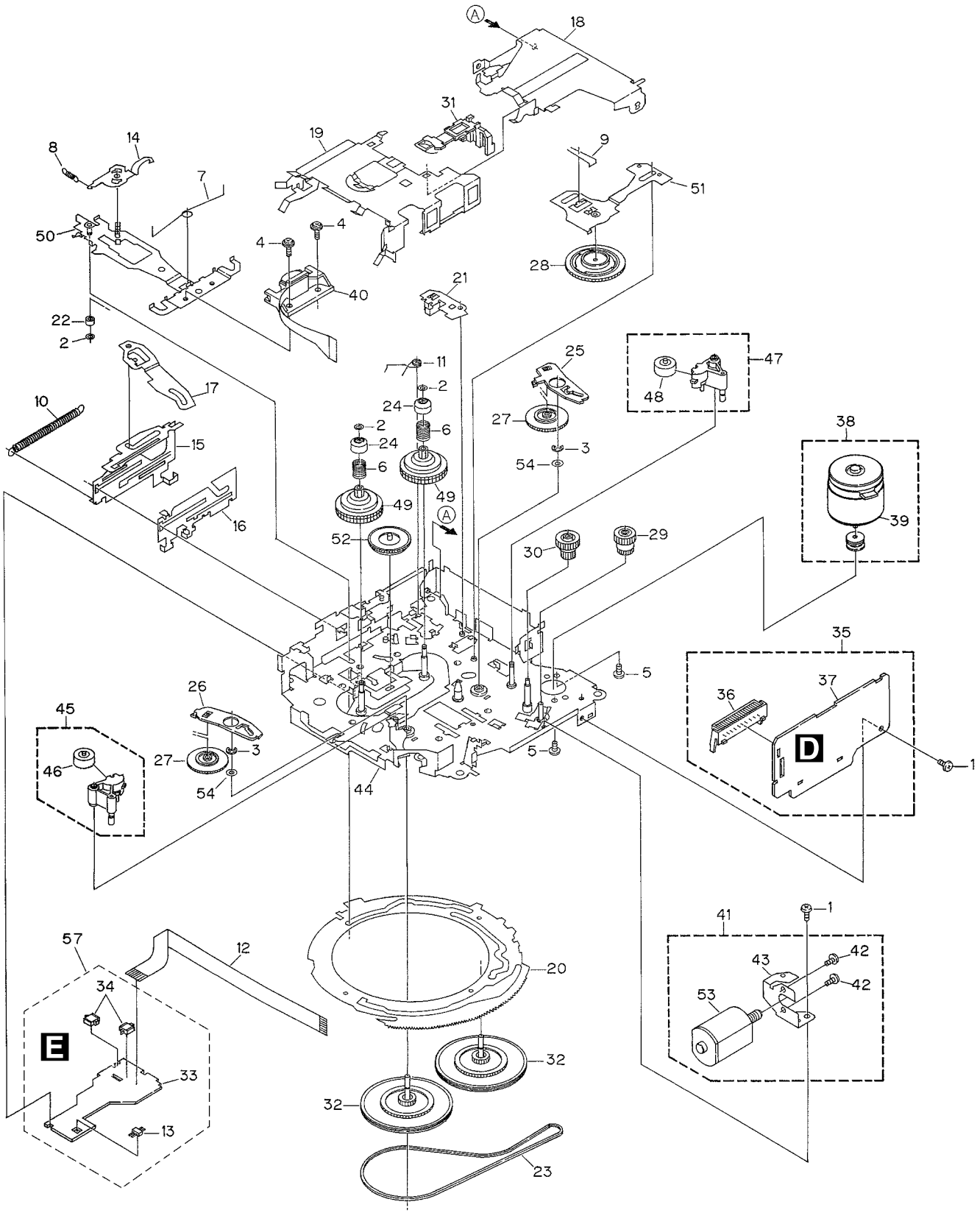
Mark	No.	Description	Part No.
	1	Case	CZN6794
*	2	Label	CZA5543
*	3	Grille Unit	See Contrast table(2)
	4	Cover	CZN6804
	5	Holder	CNV6506
	6	Spring	CBH2431
	7	Spring	CBH2430
	8	Holder	CNV6505
	9	Screw	BPZ20P100FZK
	10	Keyboard Unit	See Contrast table(2)
	11	Connector(CN900)	CZK2948
	12	Sheet	CZN6808
	13	Rubber	CZN6806
	14	Contact	CZN6807
	15	Lighting Conductor	CZN6809
	16	Light Plate	CZN6810
	17	LCD(LCD900)	CZA5561
	18	Holder	CZN6811
	19	Grille Assy	CZX5530
	20	Button(VOL)	CZA5544
	21	Button(LOCAL)	CZA5550
	22	Button(PRESET)	CZA5551
	23	Button(EQ)	CZA5545
	24	Button(BSM)	CZA5549
	25	Spring	CZB2980
	26	Button(RELEASE)	CZA5552
	27	Button(CROSS)	CZA5548
	28	Button(LOUD)	CZA5546
	29	Sheet	CZN6833
	30	Plate Assy	CZX5525
	31	Plate Assy	See Contrast table(2)
	32	Panel PCB Unit	CZW5526
	33	Connector(CN850)	CZK2950
	34	Connector(CN851)	CZK2947
	35	Holder	CZN6799
	36	Holder Unit	CXB6357
	37	Spring	CZB2981
	38	Door	CAT2109
	39	Button(EJECT)	CZA5553
	40	Panel Assy	CZX5519
	41	Screw	IMS20P045FZK
	42	Screw(M2x2)	CBA1176
	43	Damper Unit	CXB5070
	44	Washer	CBF1039
	45	Spring	CBH2429
	46	Arm	CZN6827
	47	Holder Unit	CXB6356
	48	Clutch Unit	CXB6358
	49	Washer	CBF1038
	50	Gear	CNV6507
	51	Spring	CBH2428
	52	Panel	CNS6332
	53	Cassette Mechanism Module	EXK4080
	54	Screw	BSZ26P060FMC
	55	Tuner Amp Unit	See Contrast table(2)
	56	Screw	BSZ26P100FMC
	57	Heat Sink	CZN6798
	58	IC(IC500)	See Contrast table(2)
	59	Panel	CZN6795
	60	Transistor(Q702)	2SD2396
	61	Screw	BPZ26P100FZK
	62	Screw	ISS26P055FUC
	63	Terminal(CN101)	CKF1059
	64	Connector(CN600)	CKS3408
	65	Choke Coil(L700)	CTH1221
	66	Fuse(10A)	CEK1208
	67	Connector(CN200)	CZK2943
	68	Pin Jack(CN700)	CKB1041
	69	Antenna Jack(CN100)	CKX1056
	70	Connector(CN800)	CZK2949
	71	Connector(CN300)	CKS3568
	72	Plate	CZN6730
	73	FM/AM Tuner Unit(TU100)	CZW5533
	74	Insulator	CZN6801
	75	Chassis Unit	CZX5515
	76	Screw	BMZ30P040FZK
	77	Code Assy	CZD2976
*	78	Holder	CNC9131

(2)CONTRAST TABLE

KEH-P4020/XM/UC,KEH-P4022/XM/EE and KEH-P4025/XM/ES have the same cuntruction except for the following:

Mark No.	Symbol and Description	Part No.		
		KEH-P4020/XM/UC	KEH-P4022/XM/EE	KEH-P4025/XM/ES
* 3	Grille Unit	CZX5533	CZX5535	CZX5534
10	Keyboard Unit	CZW5525	CZW5525	CZW5528
31	Plate Assy	CZX5521	CZX5523	CZX5522
55	Tuner Amp Unit	CZW5524	CZW5529	CZW5527
58	IC(IC500)	TA8277H	TA8277H	PAL007A

2.3 CASSETTE MECHANISM MODULE

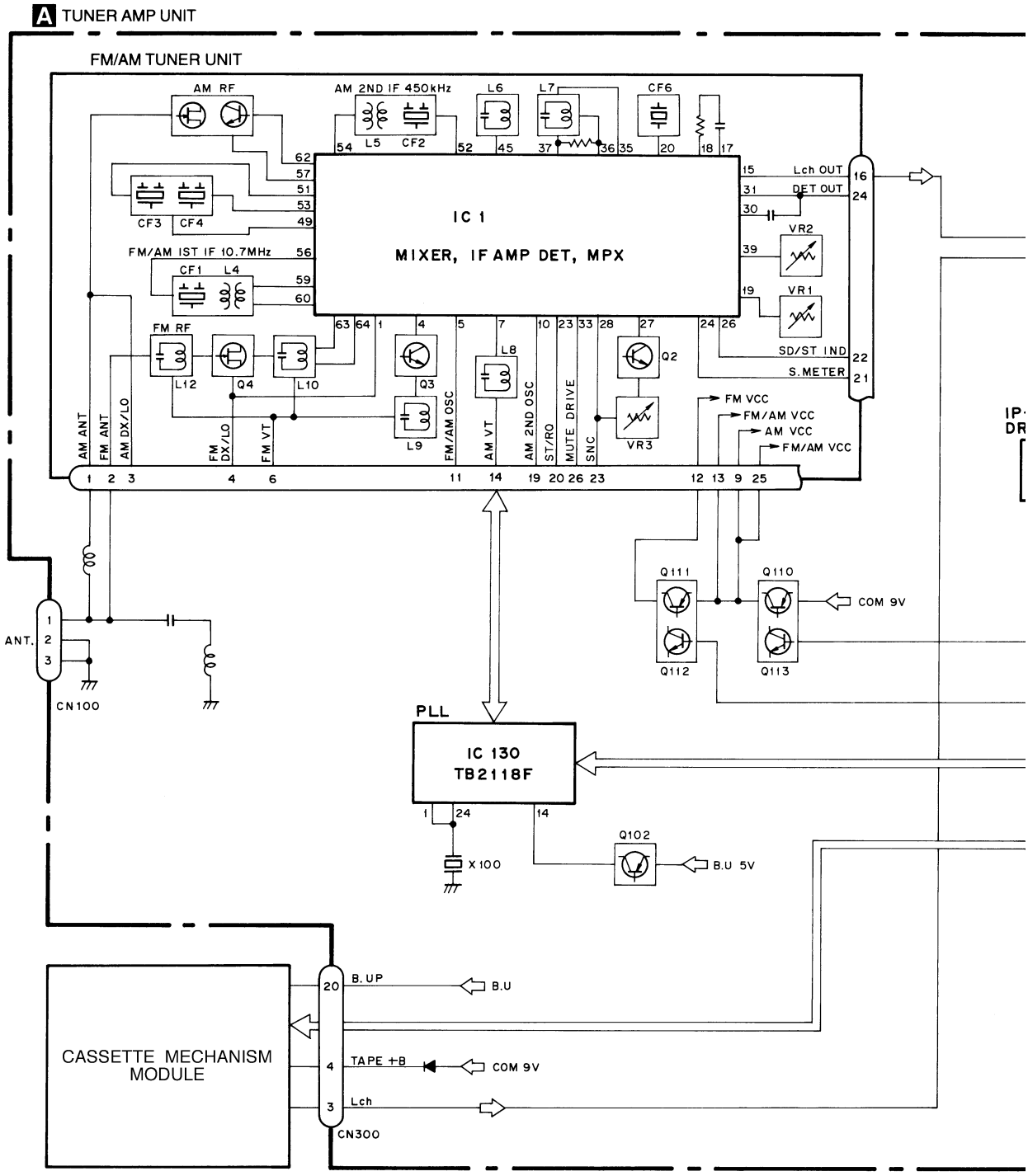


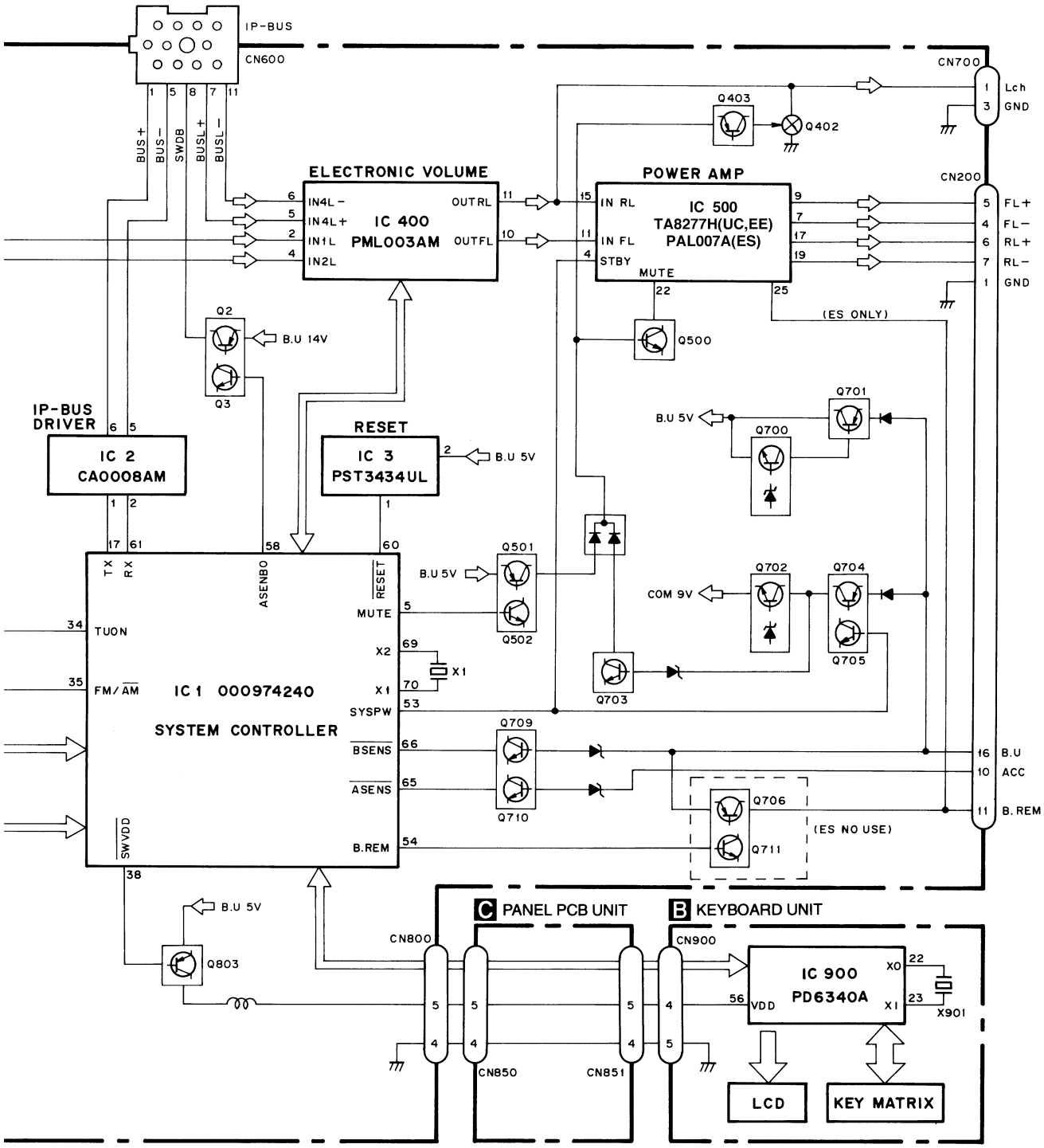
● **CASSETTE MECHANISM MODULE SECTION PARTS LIST**

Mark No.	Description	Part No.
1	Screw	BSZ20P040FMC
2	Washer	CBF1037
3	Washer	CBG1003
4	Screw	EBA1028
5	Screw	CBA1037
6	Spring	EBH1653
7	Spring	EBH1624
8	Spring	EBH1641
9	Spring	EBH1626
10	Spring	EBH1627
11	Spring	EBH1649
12	Cord	EDD1024
13	Photo-reflector(Q101)	EGN1004
14	Arm	ENC1526
15	Lever	ENC1544
16	Lever	ENC1543
17	Arm	ENC1532
18	Frame	ENC1533
19	Holder	ENC1534
20	Gear	ENC1535
21	Arm	ENC1550
22	Roller	ENR1040
23	Belt	ENT1027
24	Collar	ENV1508
25	Arm	ENV1539
26	Arm	ENV1540
27	Gear	ENV1569
28	Gear	ENV1547
29	Gear	ENV1560
30	Worm Wheel	ENV1566
31	Lever	ENV1551
32	Flywheel	ENV1554
33	PCB	ENP1196
34	Switch(S101,102)	ESG1007
35	Deck Unit	EWM1042
36	Plug(CN251)	CKS3540
37	Gathering PCB	ENX1064
38	Motor Unit(M1)	EXA1621
39	Motor	EXM1028
40	Head Assy(HD1)	EXA1589
41	Motor Unit(M2)	EXA1580
42	Screw	BMZ20P022FMC
43	Bracket	ENC1528
44	Chassis Unit	EXA1637
45	Pinch Holder Unit	EXA1584
46	Pinch Roller	ENV1518
47	Pinch Holder Unit	EXA1583
48	Pinch Roller	ENV1518
49	Reel Unit	EXA1625
50	Head Base Unit	EXA1611
51	Lever Unit	EXA1631
52	Gear Unit	EXA1632
53	Motor Unit(Service)	EXX1055
54	Washer	HBF-179
55	•••••	
56	•••••	
57	Sensor Unit	EWM1044

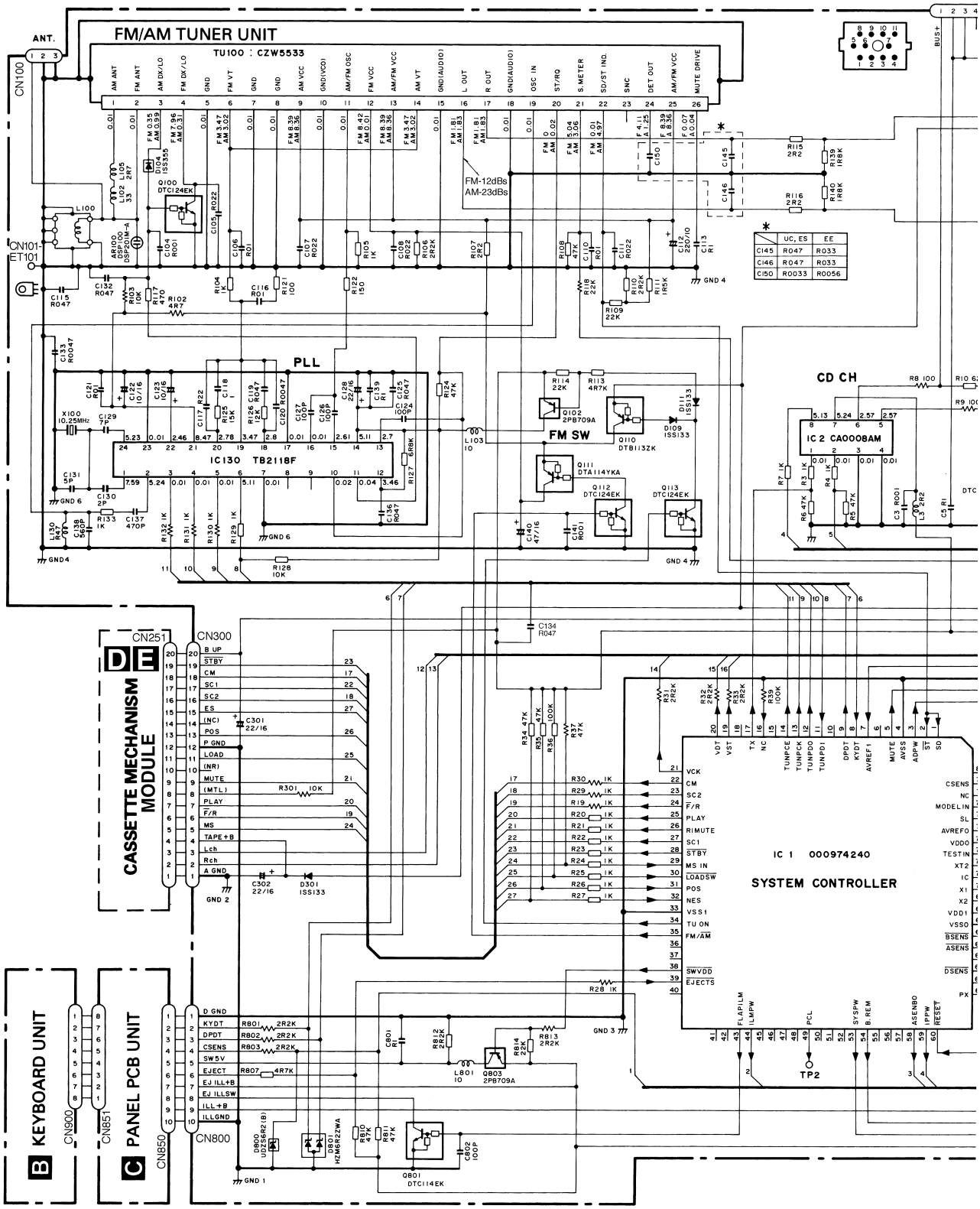
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

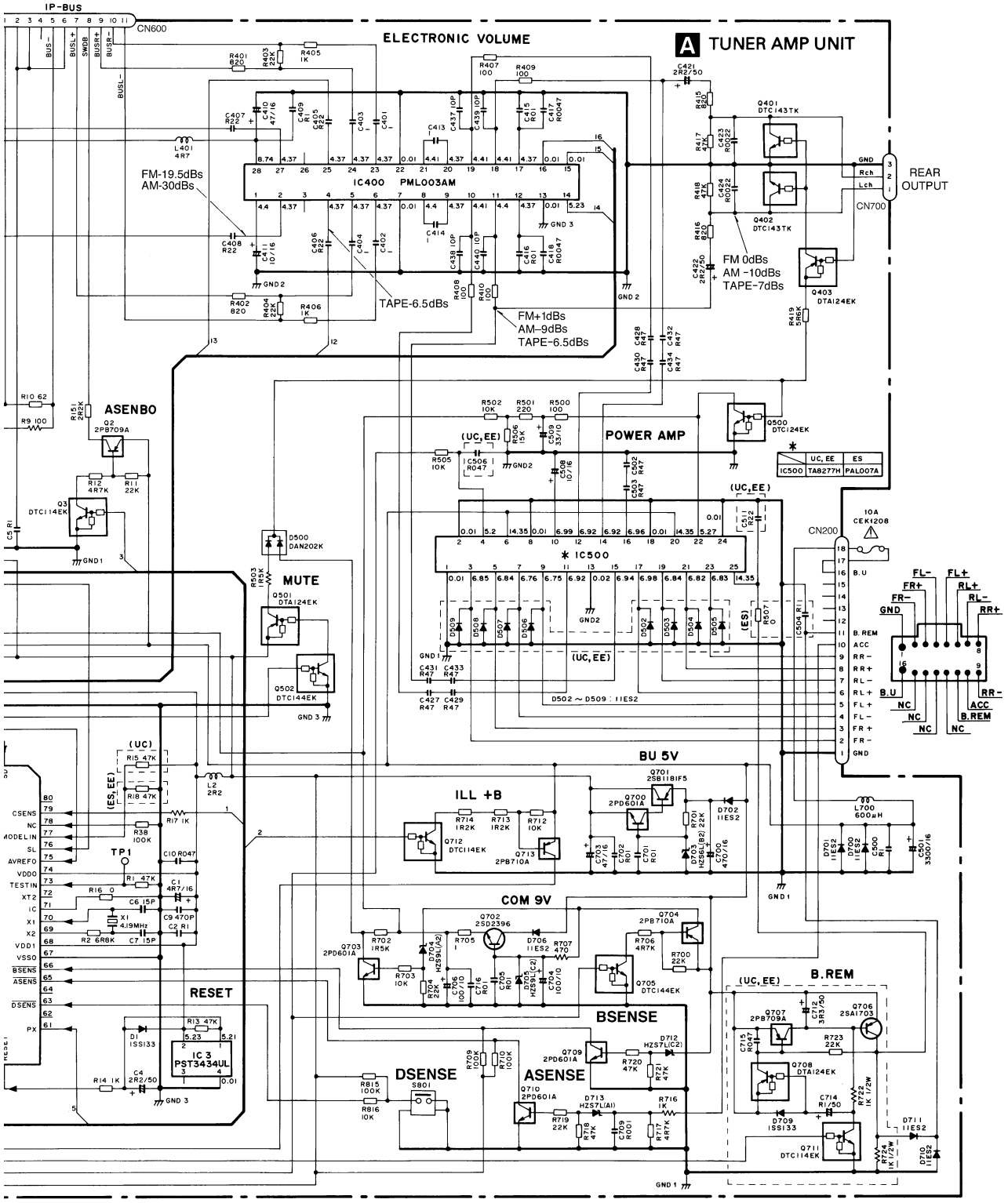
3.1 BLOCK DIAGRAM




IP-BUS
CN600
BUS+
BUS−
SWDB
BUSL+
BUSL−
ELECTRONIC VOLUME
IC 400
PML003AM
IN4L−
IN4L+
IN1L
IN2L
OUTRL
OUTFL
POWER AMP
IC 500
TA8277H(UC,EE)
PAL007A(ES)
IN RL
IN FL
STBY
MUTE
CN700
Lch
GND
CN200
FL+
FL−
RL+
RL−
GND
Q403
Q402
Q2
B.U 14V
Q3
Q500
(ES ONLY)
IP-BUS DRIVER
IC 2
CA0008AM
RESET
IC 3
PST3434UL
B.U 5V
Q701
Q700
Q501
Q502
Q702
Q704
Q705
Q703
COM 9V
IC 1 000974240
SYSTEM CONTROLLER
TX
RX
ASENBO
RESET
MUTE
TUON
FM/AM
X2
X1
SYSPW
BSENS
ASENS
SWVDD
B.REM
Q709
Q710
Q706
Q711
(ES NO USE)
B.U
ACC
B.REM
Q803
C PANEL PCB UNIT
B KEYBOARD UNIT
CN800
CN850
CN851
CN900
IC 900
PD6340A
XO
XI
VDD
X901
LCD
KEY MATRIX

3.2 OVERALL CONNECTION DIAGRAM





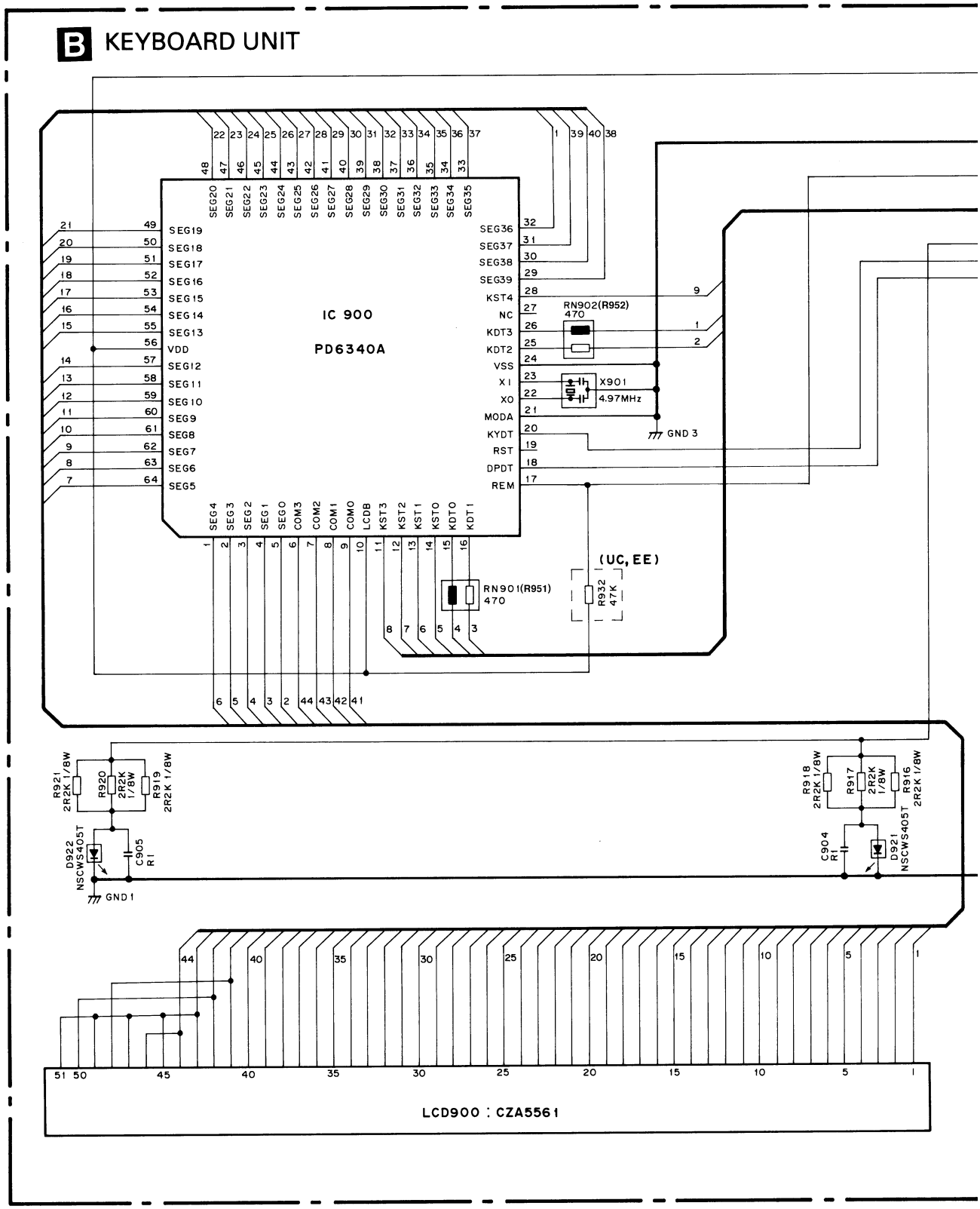
NOTE :

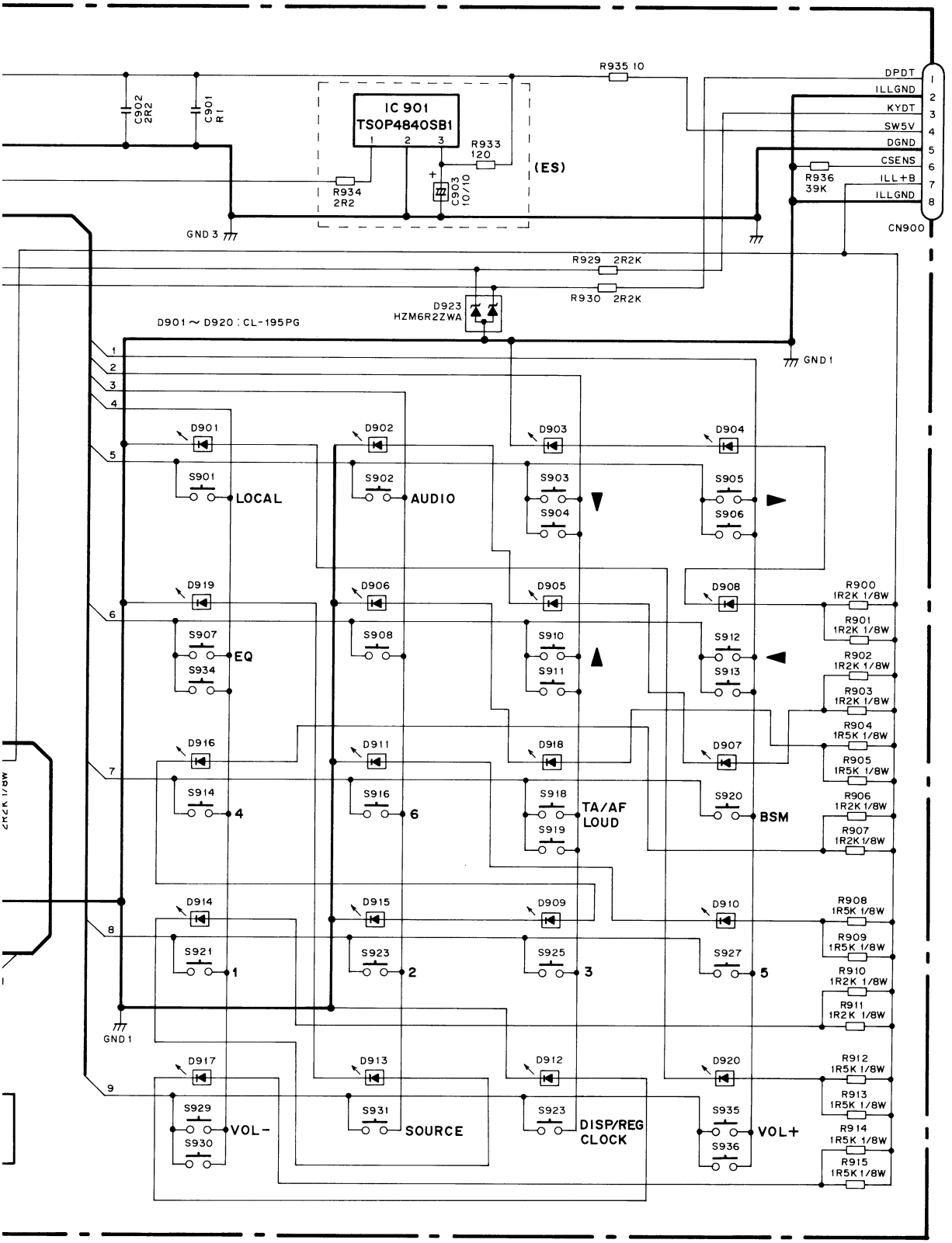
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022

The⚠mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

3.3 KEYBOARD UNIT




IC 901
TS0P4840SB1
R935 10
R933 120
(ES)
R934 2R2
C902 2R2
C901 R1
C903 10/10
GND 3
DPDT
ILLGND
KYDT
SW5V
DGND
CSENS
ILL+B
ILLGND
R936 39K
C CN851
CN900
R929 2R2K
R930 2R2K
D923 HZM6R2ZWA
D901 ~ D920 : CL-195PG
GND 1
D901
S901
LOCAL
D902
S902
AUDIO
D903
S903
S904
D904
S905
S906
D919
S907
EQ
S934
D906
S908
D905
S910
S911
D908
S912
S913
D916
S914
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D911
S916
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D918
S918
TA/AF
LOUD
S919
D907
S920
BSM
D914
S921
1
D915
S923
2
D909
S925
3
D910
S927
5
D917
S929
VOL-
S930
D913
S931
SOURCE
D912
S923
DISP/REG
CLOCK
D920
S935
VOL+
S936
R900 1R2K 1/8W
R901 1R2K 1/8W
R902 1R2K 1/8W
R903 1R2K 1/8W
R904 1R5K 1/8W
R905 1R5K 1/8W
R906 1R2K 1/8W
R907 1R2K 1/8W
R908 1R5K 1/8W
R909 1R5K 1/8W
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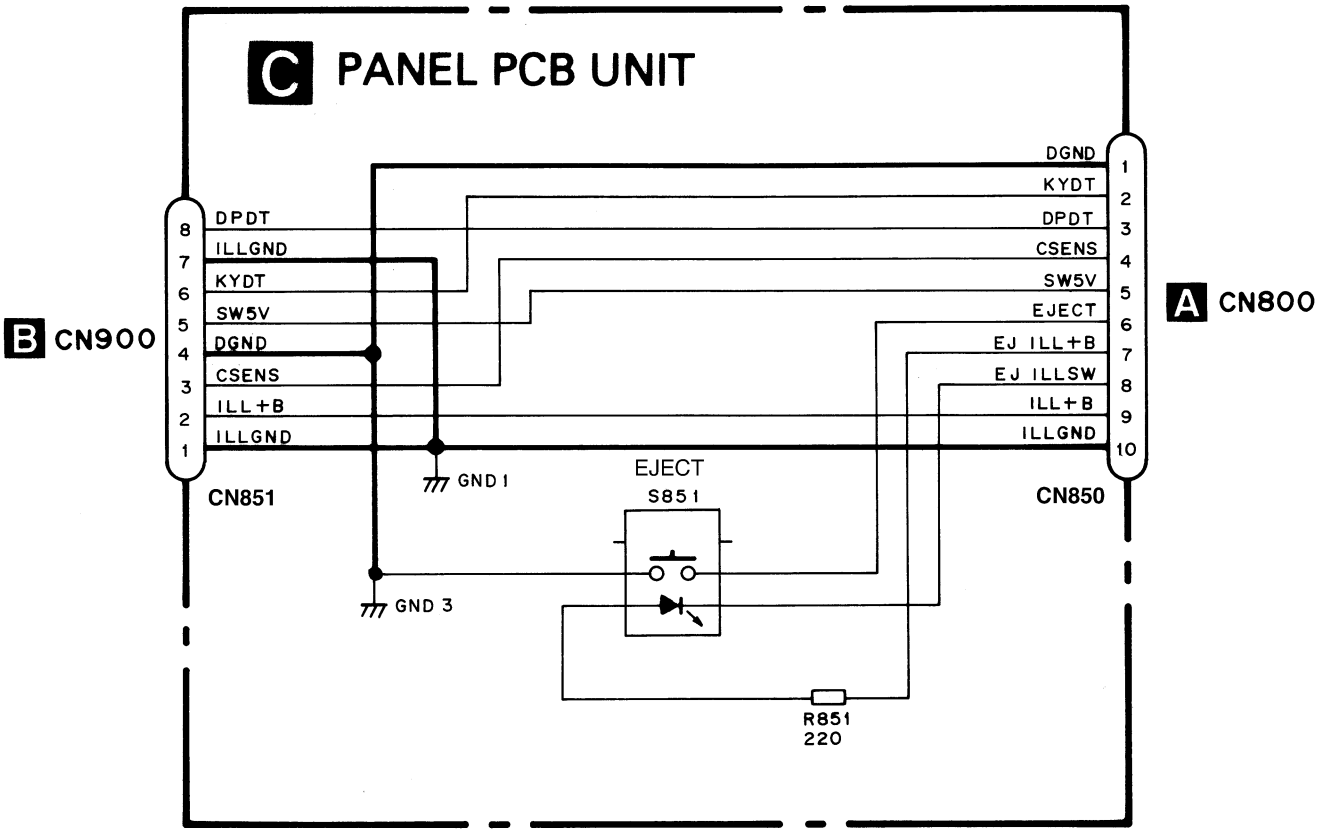
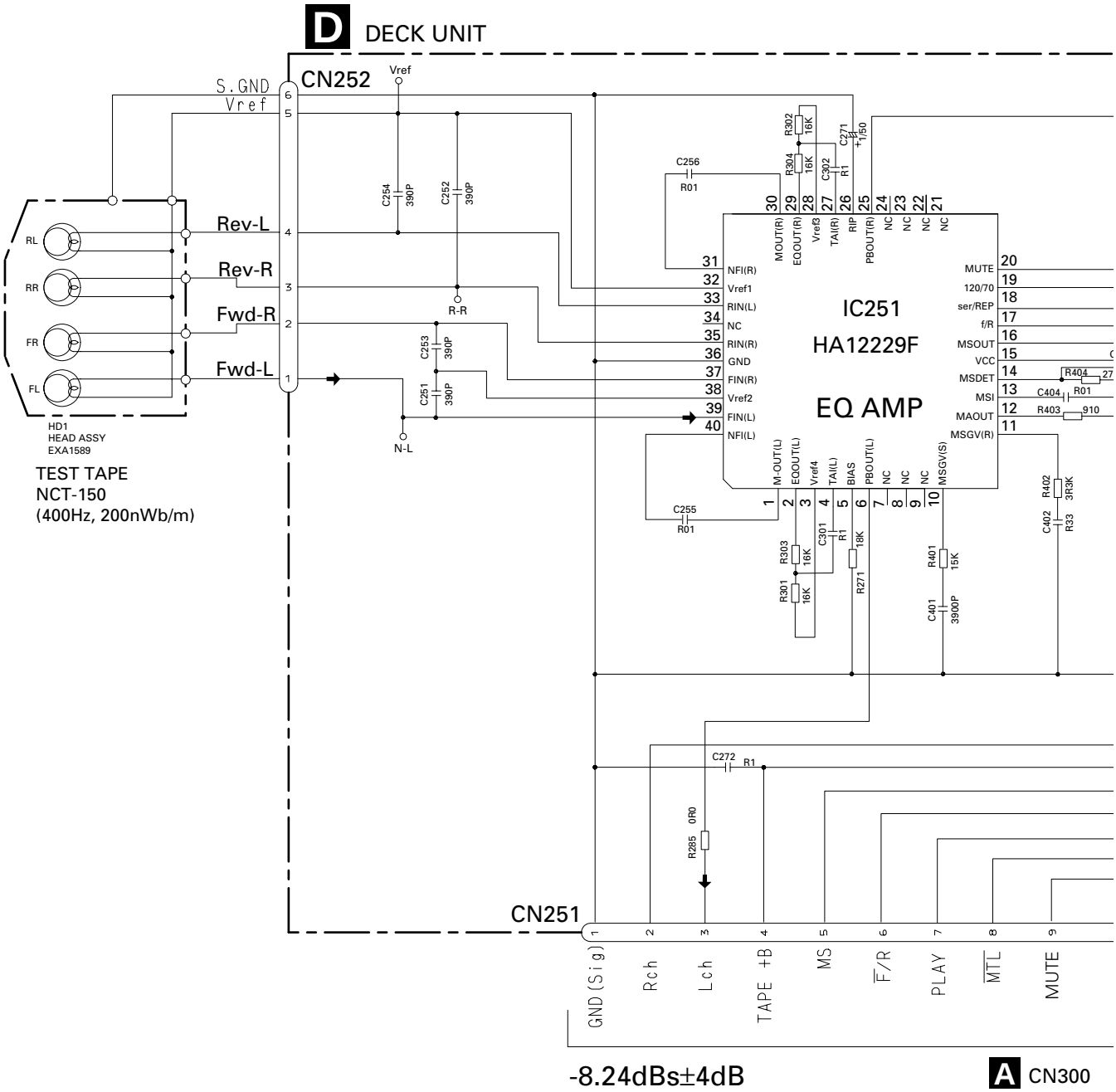
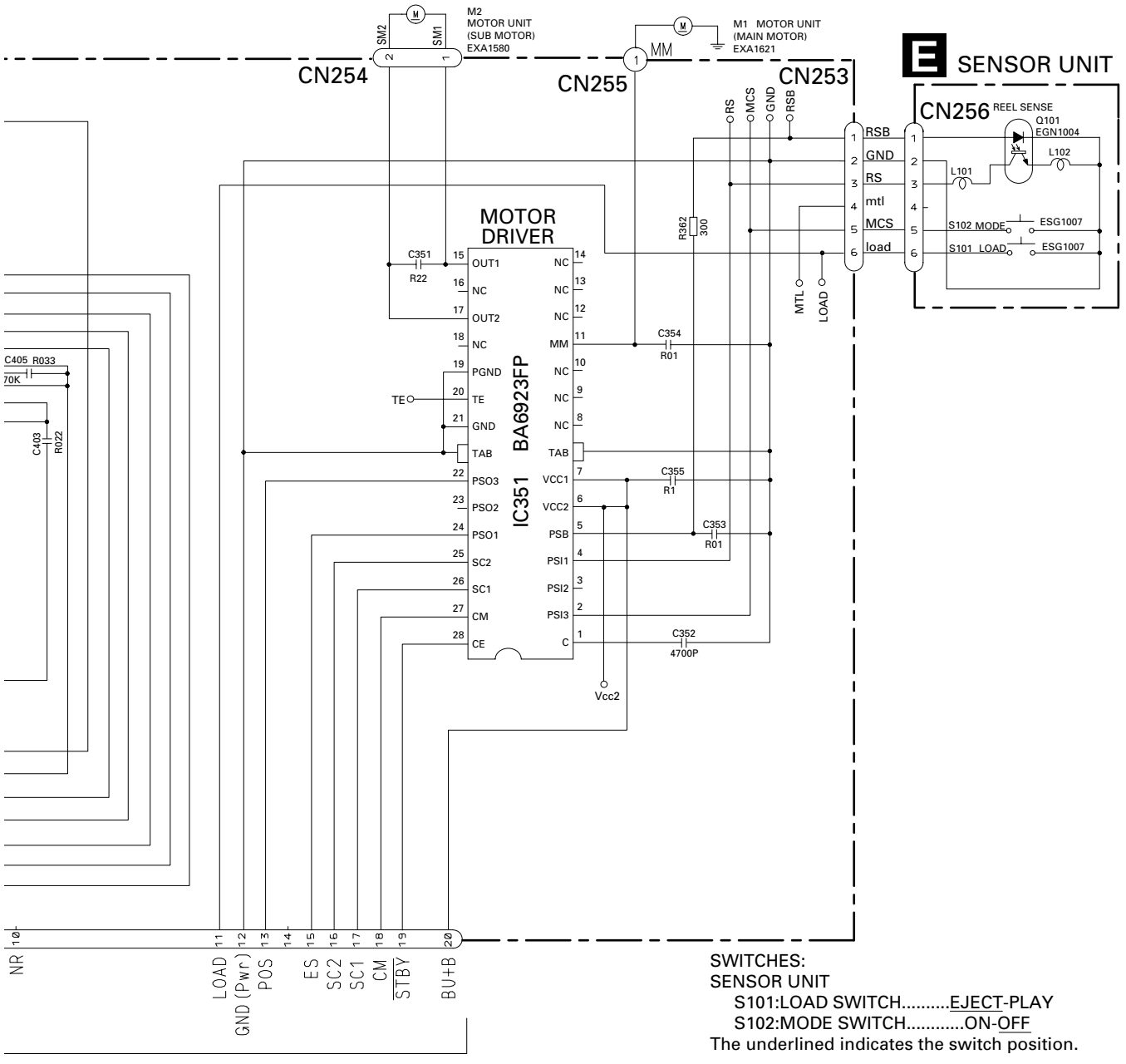
R911 1R2K 1/8W
R912 1R5K 1/8W
R913 1R5K 1/8W
R914 1R5K 1/8W
R915 1R5K 1/8W

3.4 PANEL PCB UNIT



3.5 CASSETTE MECHANISM MODULE





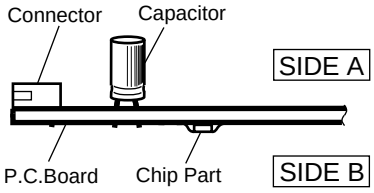
SWITCHES:
SENSOR UNIT
S101:LOAD SWITCH.....EJECT-PLAY
S102:MODE SWITCH.....ON-OFF
The underlined indicates the switch position.

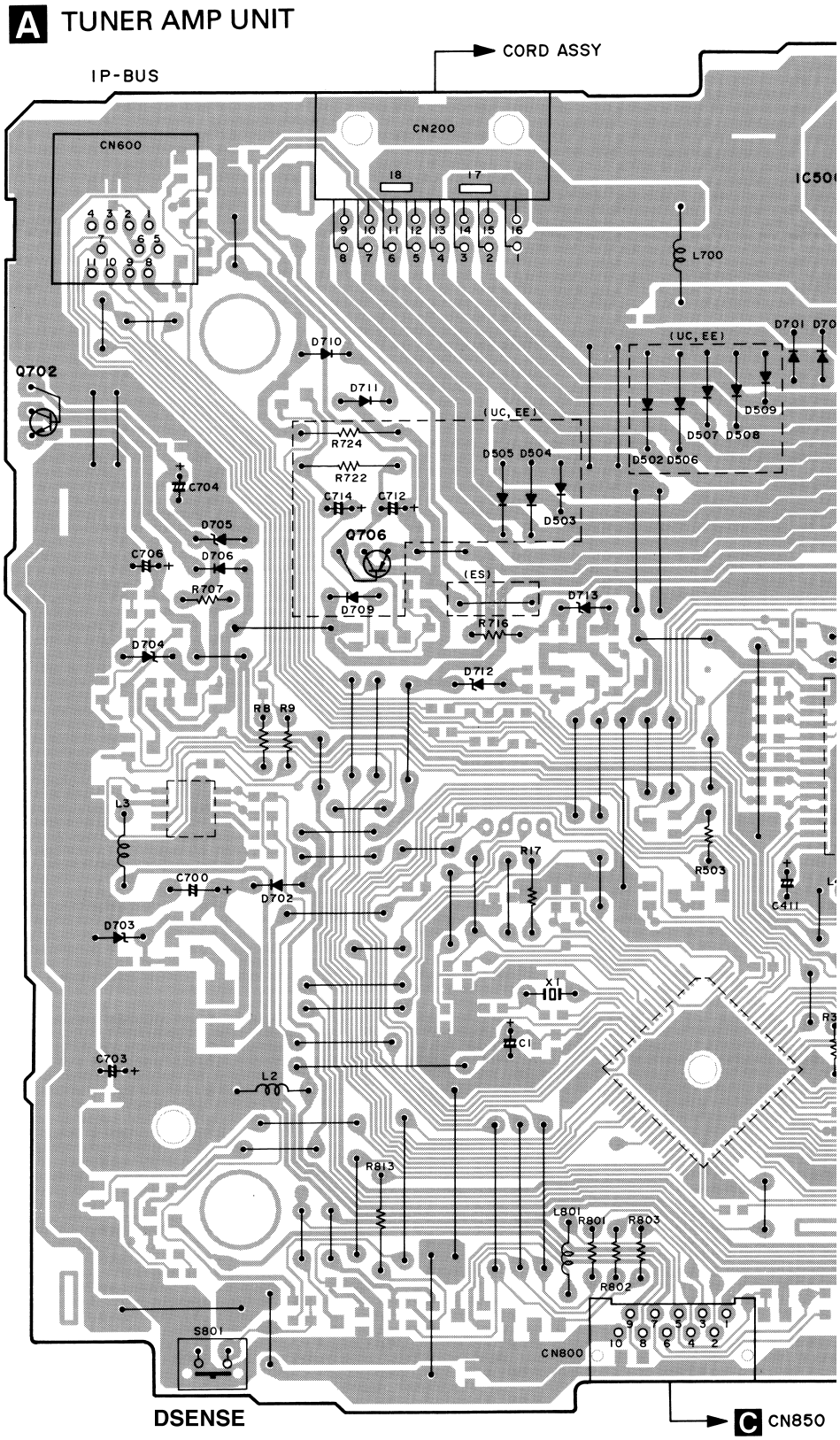
4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

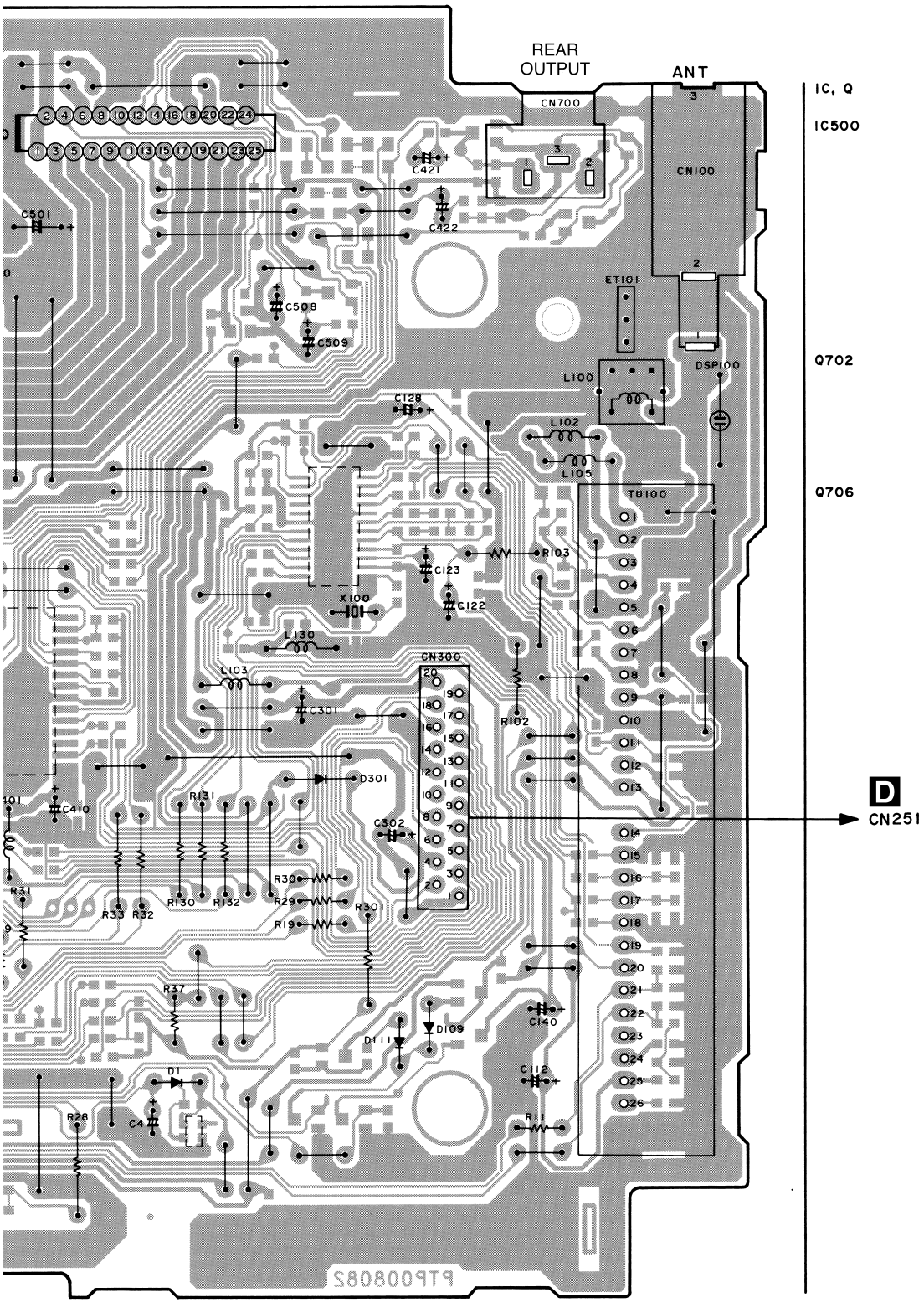
NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams





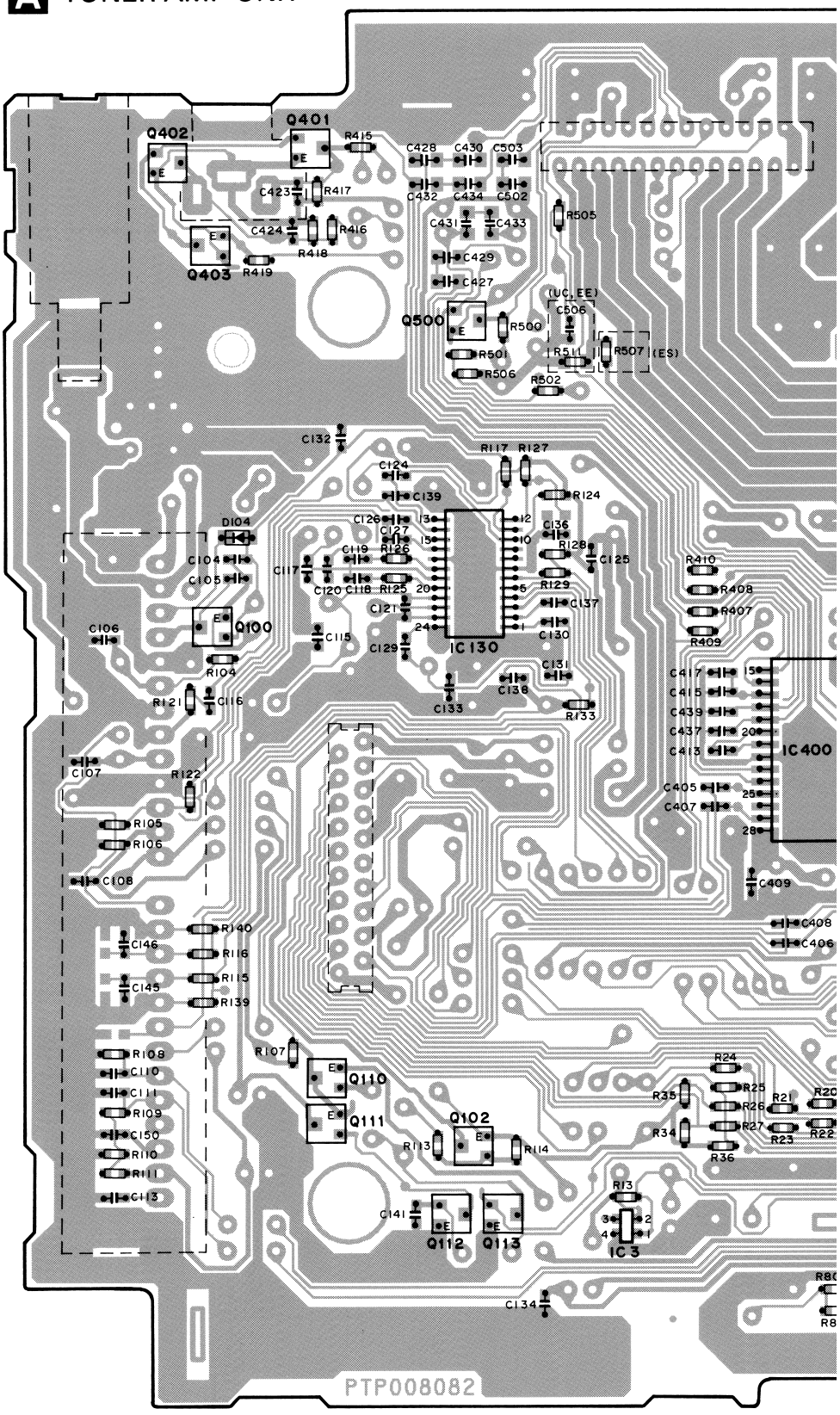
SIDE A


REAR
OUTPUT
ANT
CN700
CN100
IC, Q
IC500
Q702
Q706
D
CN251
C421
C422
C501
C508
C509
ET101
L100
DSP100
C128
L102
L105
TU100
R103
C123
C122
X100
L130
L103
CN300
C301
R102
D301
C410
R131
C302
R30
R29
R19
R301
R33
R32
R130
R132
R31
R37
D111
D109
C140
C112
R11
D1
R28
C4

FRONT

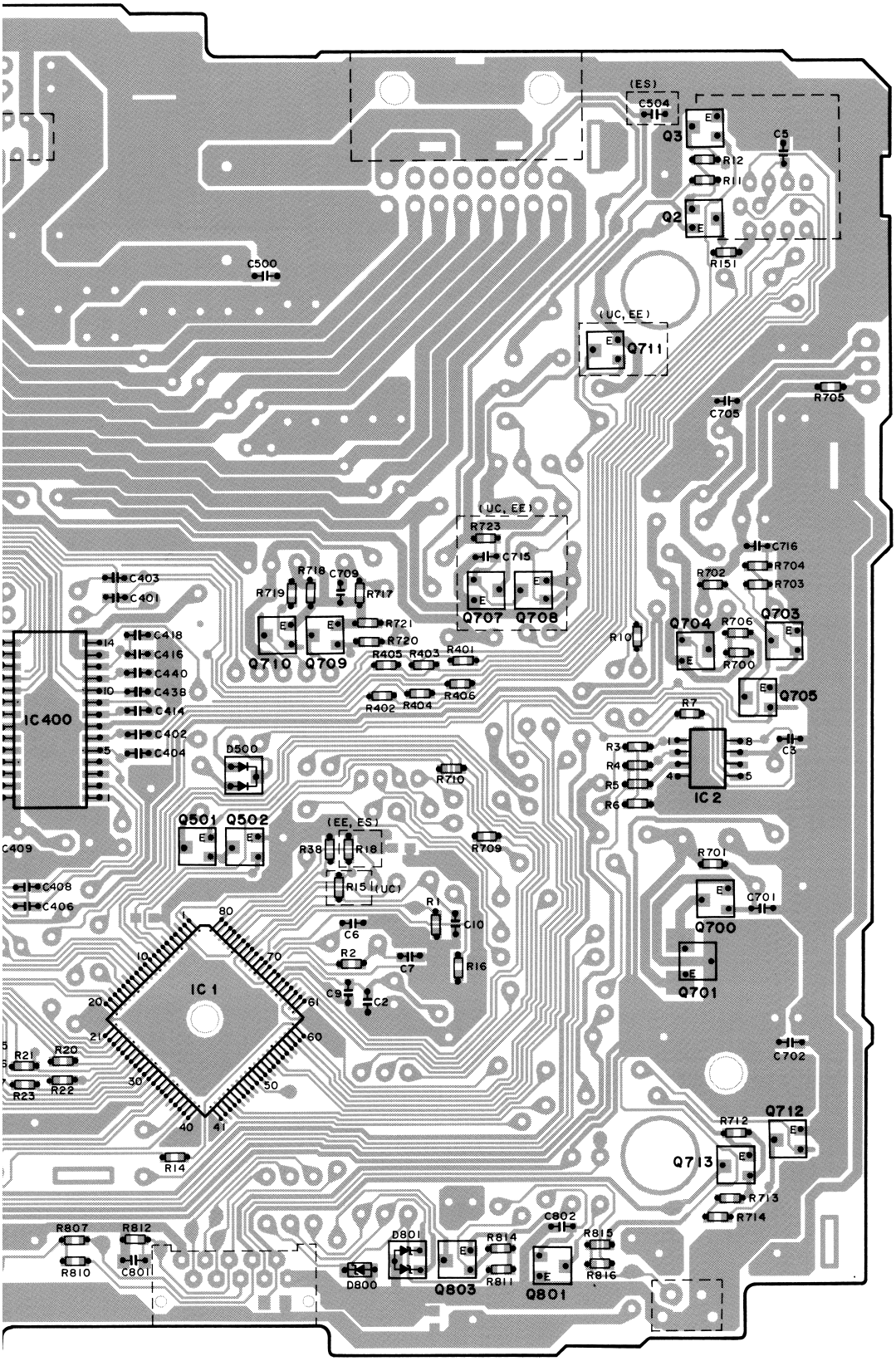
A TUNER AMP UNIT

IC,Q
Q402, Q401
Q3
Q2
Q403
Q500
Q711
IC130
Q100
Q707, Q708
Q710, Q709
Q704, Q703
Q705
IC400
IC2
Q501, Q502
Q700
Q701
IC1
Q110
Q111
Q102
Q713, Q712
Q112, Q113
IC3
Q803, Q801



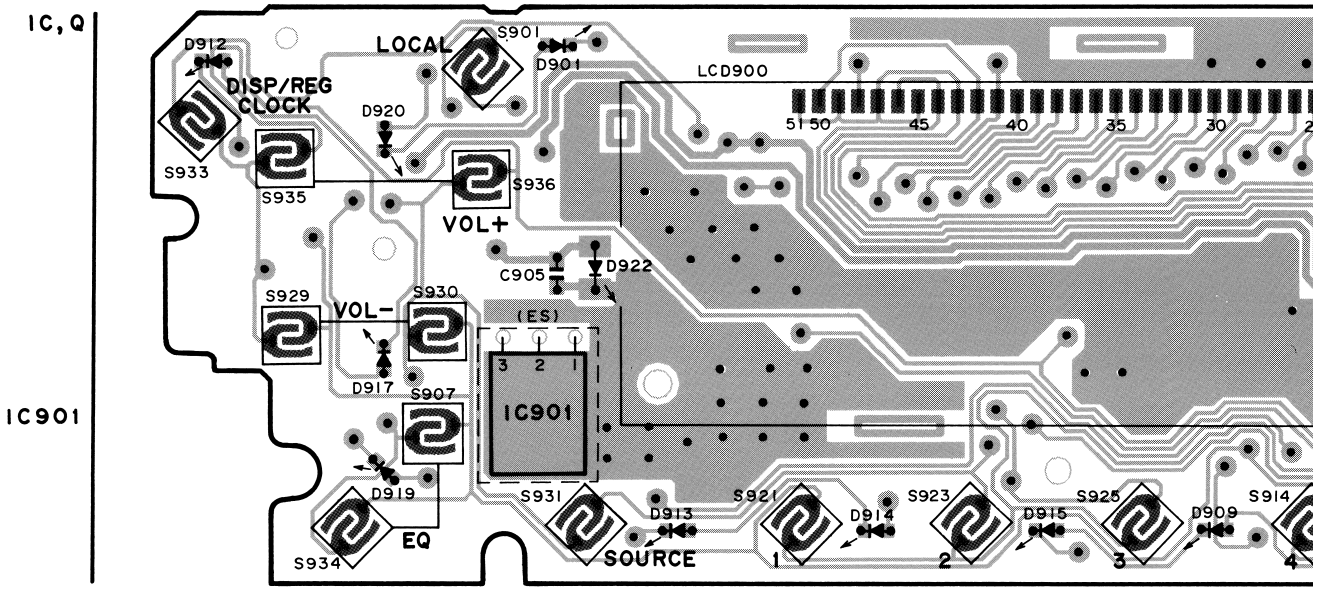
FRONT

SIDE B

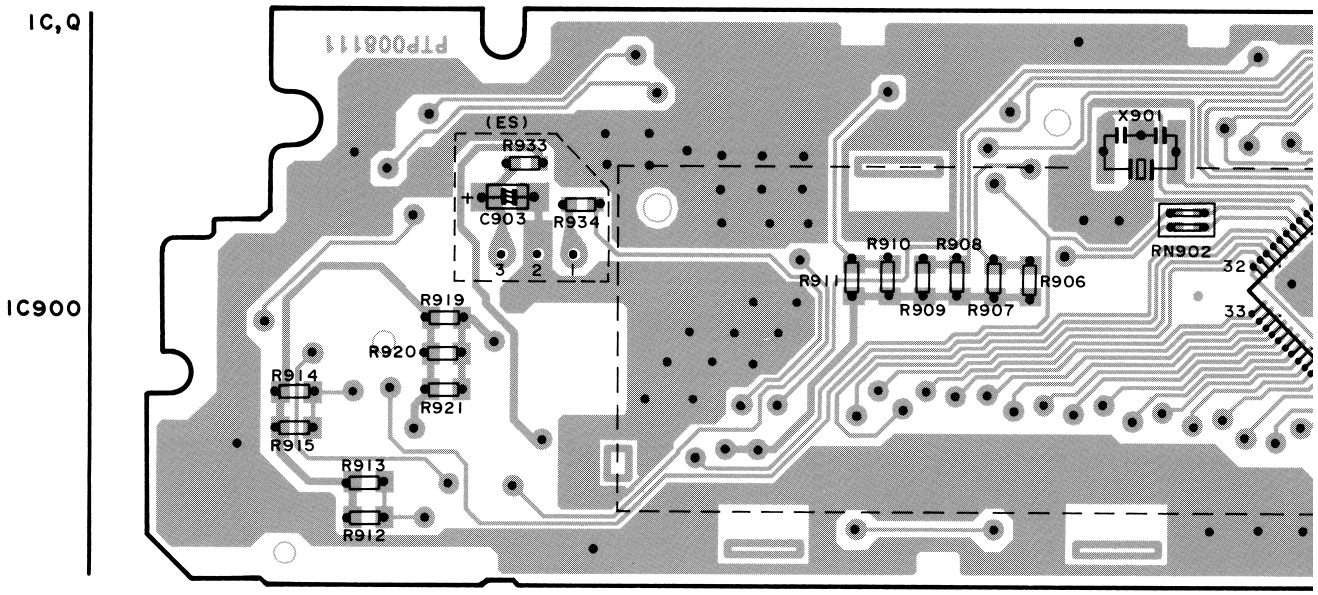

(ES)
C504
Q3
C5
R12
R11
Q2
R151
C500
(UC, EE)
Q711
C705
R705
(UC, EE)
R723
C715
Q707
Q708
C716
R704
R702
R703
Q704
R706
Q703
R710
R700
Q705
R7
C3
IC 2
R3
R4
R5
R6
C403
C401
R718
C709
R719
R717
R721
R720
R405
R403
R401
Q710
Q709
R402
R404
R406
C418
C416
C440
C438
C414
C402
C404
IC400
D500
Q501
Q502
C409
(EE, ES)
R38
R18
R15
(UC)
R709
C408
C406
R701
C701
Q700
Q701
R1
C10
C6
R2
C7
R16
C9
C2
IC 1
C702
R21
R20
R22
R23
Q712
R712
Q713
R713
R714
R14
R807
R812
R810
C801
D801
D800
R814
R811
C802
R815
R816
Q803
Q801

4.2 KEYBOARD UNIT

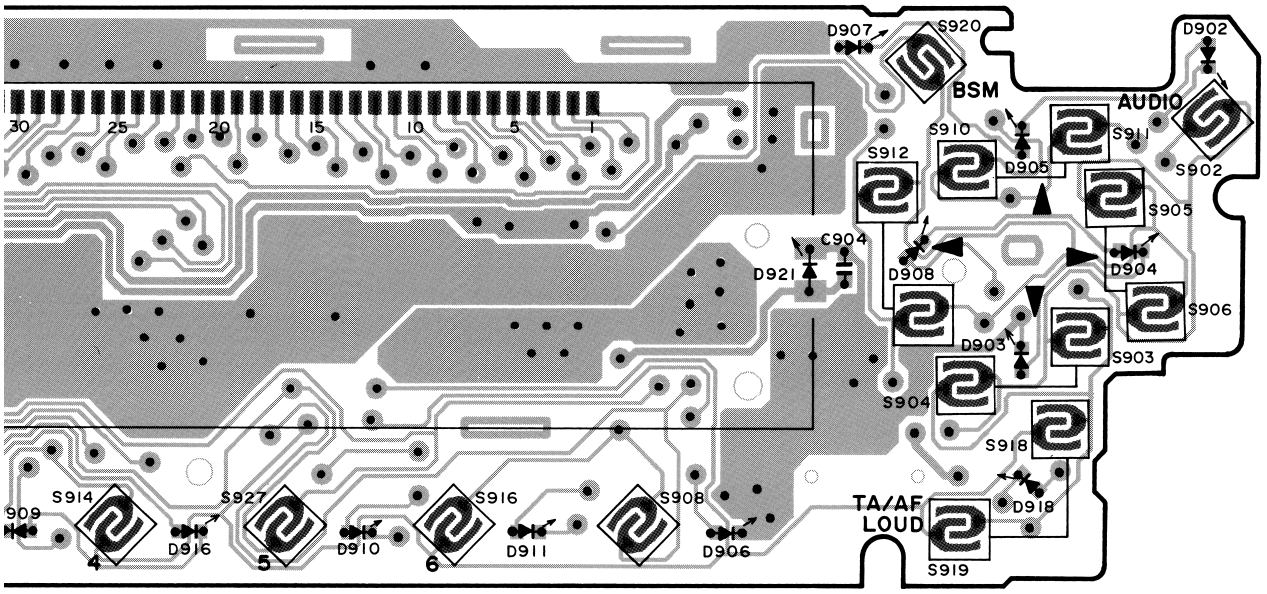
B KEYBOARD UNIT



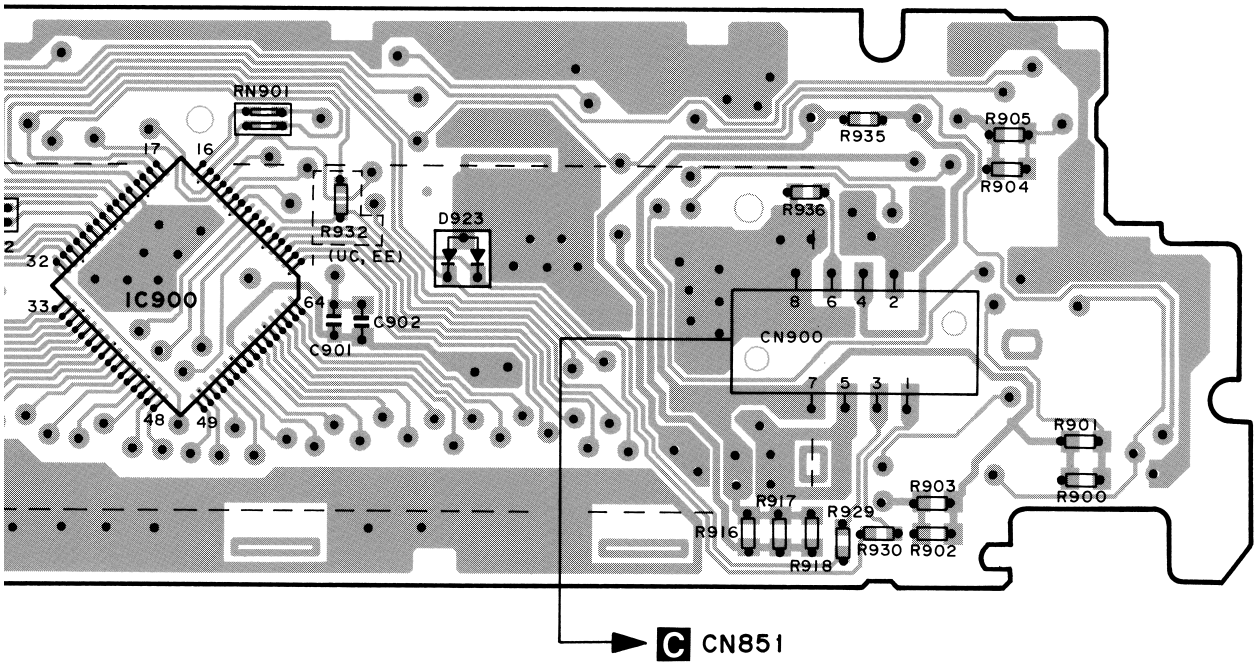
B KEYBOARD UNIT



SIDE A

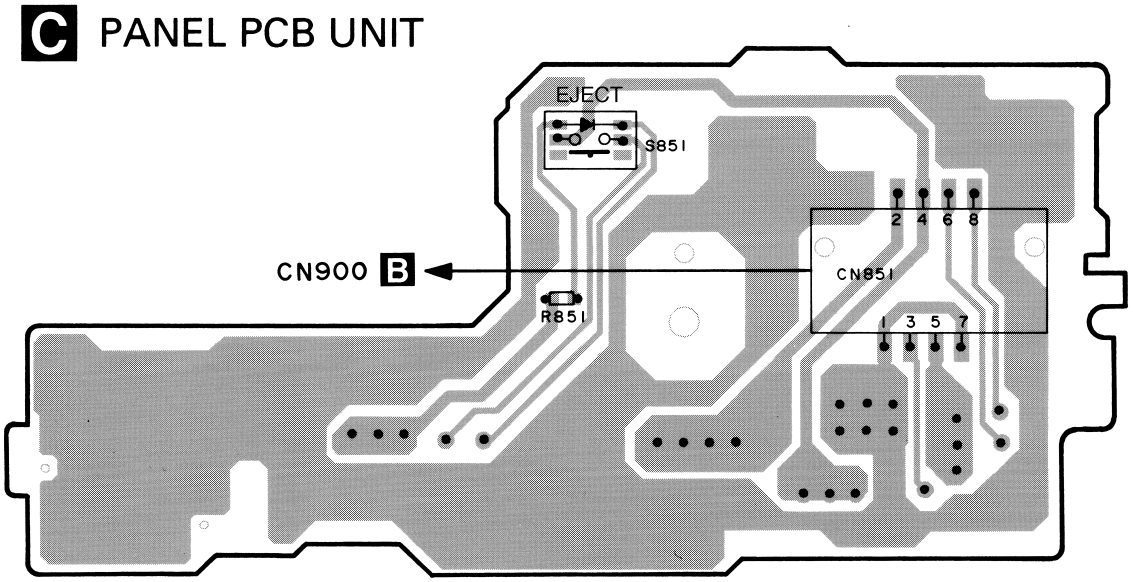

D907
S920
D902
BSM
AUDIO
30
25
20
15
10
5
1
S910
S911
S912
D905
S902
S905
C904
D908
D904
D921
S906
D903
S903
S904
S918
S914
S927
S916
S908
D909
D916
D910
D911
D906
TA/AF
LOUD
D918
S919
4
5
6

SIDE B

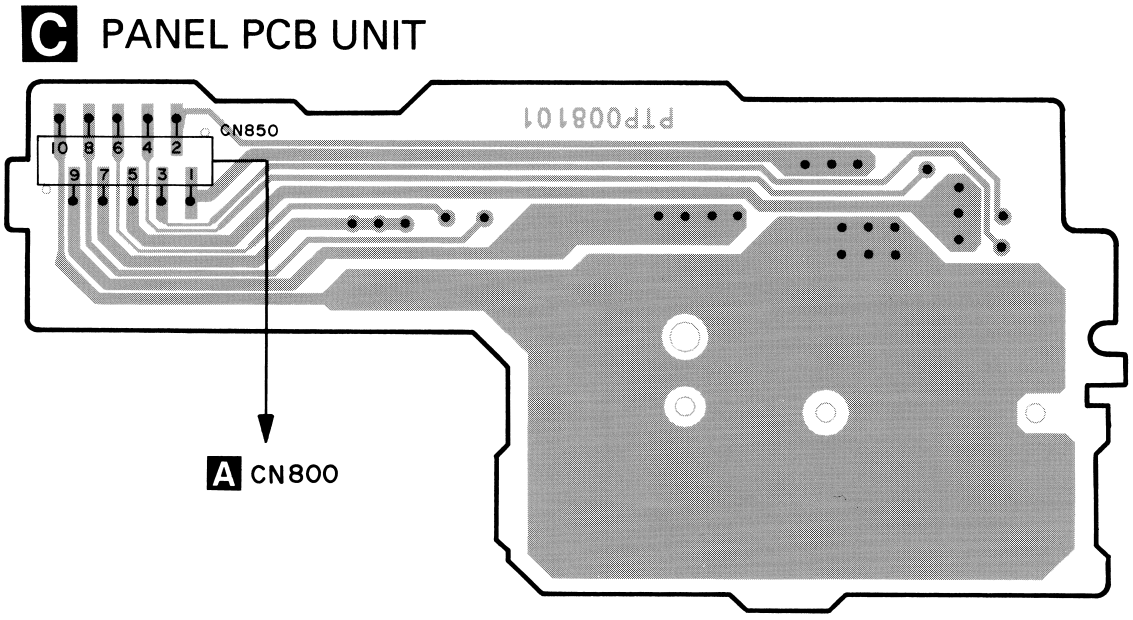

RN901
17
16
R935
R905
R904
R936
D923
R932
(UC, EE)
32
IC900
33
64
C902
C901
8
6
4
2
CN900
7
5
3
1
48
49
R901
R900
R903
R917
R929
R916
R930
R902
R918
C CN851

4.3 PANEL PCB UNIT

SIDE A



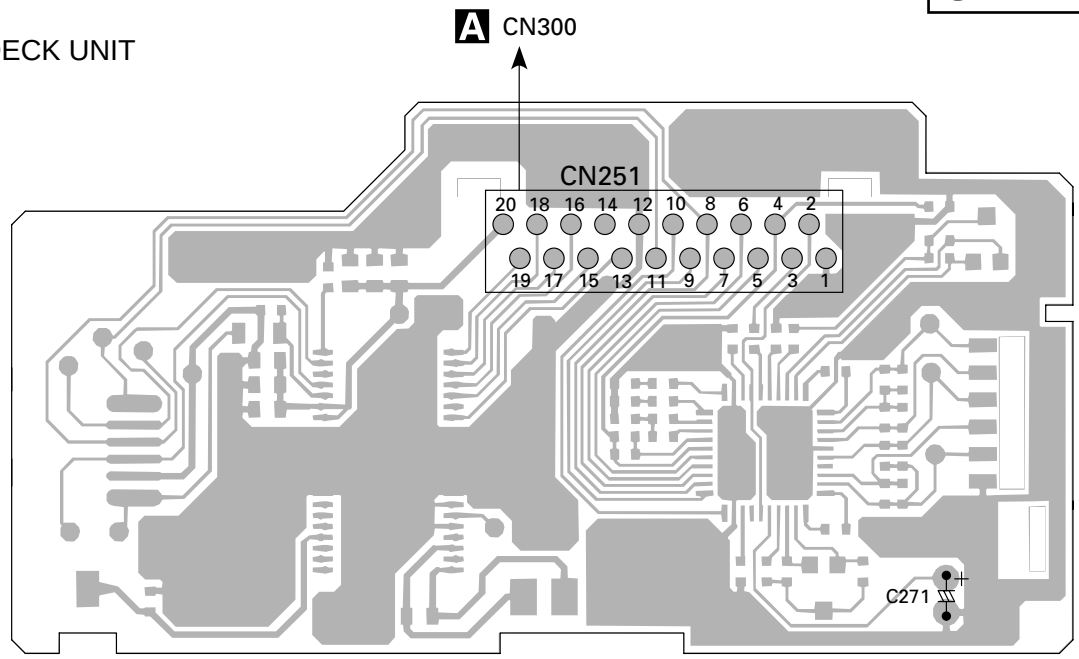
SIDE B



4.4 CASSETTE MECHANISM MODULE

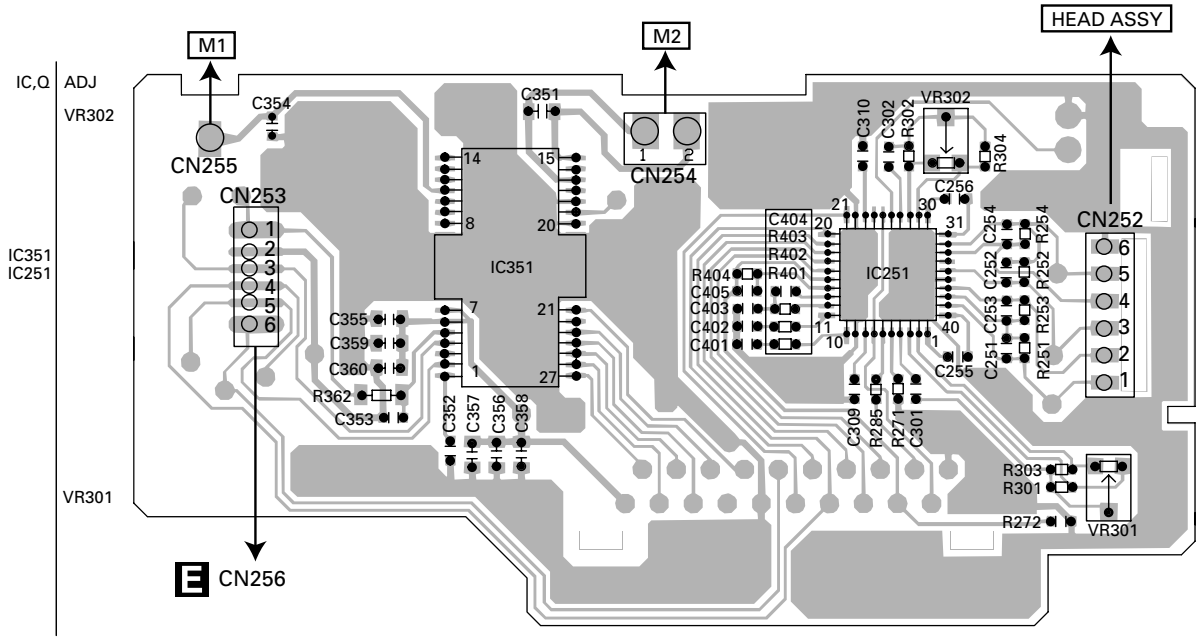
SIDE A

D DECK UNIT

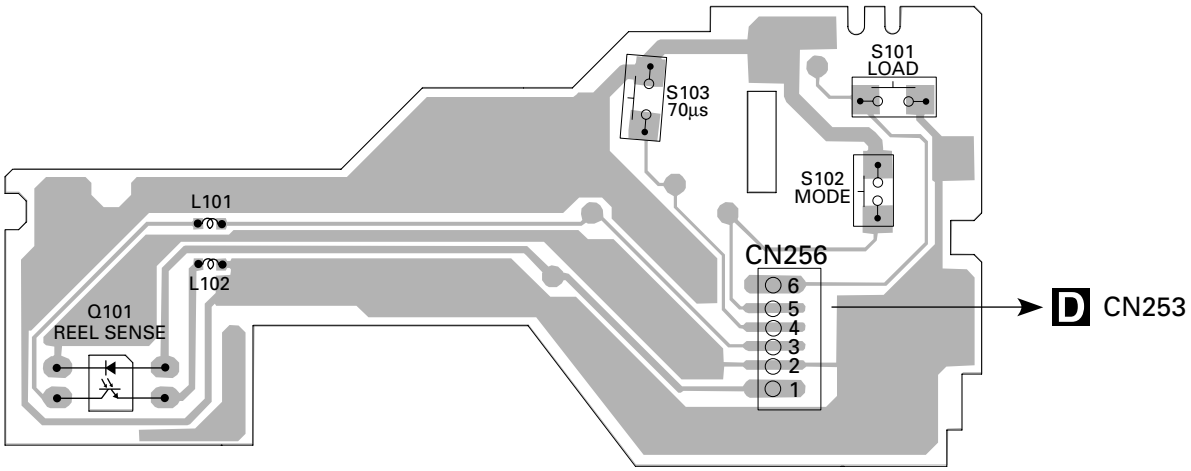


SIDE B

D DECK UNIT



E SENSOR UNIT



5. ELECTRICAL PARTS LIST

NOTES:

- **Parts whose parts numbers are omitted are subject to being not supplied.**
- **The part numbers shown below indicate chip components.**

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

A Unit Number : CZW5524(KEH-P4020/XM/UC)
CZW5527(KEH-P4025/XM/ES)
CZW5529(KEH-P4022/XM/EE)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

Circuit Symbol and No.		Part Name	Part No.
IC	1	IC	000974240
IC	2	IC	CA0008AM
IC	3	IC	PST3434UL
IC	130	IC	TB2118F
IC	400	IC	PML003AM
IC	500	IC	See Contrast table
Q	2	Transistor	2PB709A
Q	3	Transistor	DTC114EK
Q	100	Transistor	DTC124EK
Q	102	Transistor	2PB709A
Q	110	Transistor	DTB113ZK
Q	111	Transistor	DTA114YKA
Q	112	Transistor	DTC124EK
Q	113	Transistor	DTC124EK
Q	401	Transistor	DTC143TK
Q	402	Transistor	DTC143TK
Q	403	Transistor	DTA124EK
Q	500	Transistor	DTC124EK
Q	501	Transistor	DTA124EK
Q	502	Transistor	DTC144EK
Q	700	Transistor	2PD601A
Q	701	Transistor	2SB1181F5
Q	702	Transistor	2SD2396
Q	703	Transistor	2PD601A
Q	704	Transistor	2SB710A
Q	705	Transistor	DTC144EK
Q	706	Transistor	See Contrast table
Q	707	Transistor	See Contrast table
Q	708	Transistor	See Contrast table
Q	709	Transistor	2PD601A
Q	710	Transistor	2PD601A
Q	711	Transistor	See Contrast table
Q	712	Transistor	DTC114EK
Q	713	Transistor	2SB710A
Q	801	Transistor	DTC114EK
Q	803	Transistor	2PB709A
D	1	Diode	1SS133
D	104	Diode	1SS355
D	109	Diode	1SS133
D	111	Diode	1SS133
D	301	Diode	1SS133
D	500	Diode	DAN202K
D	502	Diode	See Contrast table
D	503	Diode	See Contrast table
D	504	Diode	See Contrast table
D	505	Diode	See Contrast table
D	506	Diode	See Contrast table
D	507	Diode	See Contrast table
D	508	Diode	See Contrast table
D	509	Diode	See Contrast table
D	700	Diode	11ES2
D	701	Diode	11ES2
D	702	Diode	11ES2
D	703	Diode	HZS6L(B2)
D	704	Diode	HZS9L(A2)
D	705	Diode	HZS9L(C2)
D	706	Diode	11ES2
D	709	Diode	See Contrast table
D	710	Diode	11ES2
D	711	Diode	11ES2
D	712	Diode	HZS7L(C2)
D	713	Diode	HZS7L(A1)
D	800	Diode	UDZS6R2(B)
D	801	Diode	HZM6R2ZWA
L	2	Inductor	LAU2R2J
L	3	Inductor	LAU2R2J
L	100	Coil	CZT2930
L	102	Ferri-Inductor	LAU330J
L	103	Ferri-Inductor	LAU100J
L	105	Ferri-Inductor	LAU2R7J
L	130	Inductor	LAUR47K
L	401	Ferri-Inductor	LAU4R7J
L	700	Choke Coil 600 μH	CTH1221
L	801	Ferri-Inductor	LAU100J
X	1	Crystal Resonator 4.194304MHz	CZS2918
X	100	Crystal Resonator 10.25MHz	CZS2919
S	801	Switch (DSENSE)	CSN1039
TU	100	FM / AM Tuner Unit	CZW5533
AR	100	Surge Protector	DSP-201M-A11F

RESISTORS

R	1		RS1/16S473J
R	2		RS1/16S682J
R	3		RS1/16S102J
R	4		RS1/16S102J
R	5		RS1/16S473J

Circuit Symbol and No.	Part Name	Part No.
R 6		RS1/16S473J
R 7		RS1/16S102J
R 8		RD1/4PU101J
R 9		RD1/4PU101J
R 10		RS1/16S620J
R 11		RS1/16S223J
R 12		RS1/16S472J
R 13		RS1/16S473J
R 14		RS1/16S102J
R 15		See Contrast table
R 16		RS1/16S0R0J
R 17		RD1/4PU102J
R 18		See Contrast table
R 19		RD1/4PU102J
R 20		RS1/16S102J
R 21		RS1/16S102J
R 22		RS1/16S102J
R 23		RS1/16S102J
R 24		RS1/16S102J
R 25		RS1/16S102J
R 26		RS1/16S102J
R 27		RS1/16S102J
R 28		RD1/4PU102J
R 29		RD1/4PU102J
R 30		RD1/4PU102J
R 31		RD1/4PU222J
R 32		RD1/4PU222J
R 33		RD1/4PU222J
R 34		RS1/16S473J
R 35		RS1/16S473J
R 36		RS1/16S104J
R 37		RD1/4PU473J
R 38		RS1/16S104J
R 39		RD1/4PU104J
R 102		RD1/4PU4R7J
R 103		RD1/4PU103J
R 104		RS1/16S102J
R 105		RS1/16S102J
R 106		RS1/16S222J
R 107		RS1/16S2R2J
R 108		RS1/16S473J
R 109		RS1/16S223J
R 110		RS1/16S222J
R 111		RS1/16S152J
R 113		RS1/16S472J
R 114		RS1/16S223J
R 115		RS1/16S222J
R 116		RS1/16S222J
R 117		RS1/16S471J
R 118		RD1/4PU223J
R 121		RS1/16S101J
R 122		RS1/16S151J
R 124		RS1/16S473J
R 125		RS1/16S153J
R 126		RS1/16S123J
R 127		RS1/16S682J
R 128		RS1/16S103J
R 129		RS1/16S102J
R 130		RD1/4PU102J
R 131		RD1/4PU102J
R 132		RD1/4PU102J
R 133		RS1/16S102J
R 139		RS1/16S182J
R 140		RS1/16S182J
R 151		RS1/16S222J
R 301		RD1/4PU103J
R 401		RS1/16S821J
R 402		RS1/16S821J
R 403		RS1/16S223J
R 404		RS1/16S223J
R 405		RS1/16S102J
R 406		RS1/16S102J
R 407		RS1/16S101J
R 408		RS1/16S101J
R 409		RS1/16S101J
R 410		RS1/16S101J
R 415		RS1/16S821J
R 416		RS1/16S821J
R 417		RS1/16S473J
R 418		RS1/16S473J
R 419		RS1/16S562J
R 500		RS1/16S101J
R 501		RS1/16S221J
R 502		RS1/16S103J
R 503		RD1/4PU152J
R 505		RS1/16S103J
R 506		RS1/16S153J
R 507		See Contrast table
R 700		RS1/16S223J
R 701		RS1/16S223J
R 702		RS1/16S152J
R 703		RS1/16S103J
R 704		RS1/16S223J
R 705		RS1/16S1R0J
R 706		RS1/16S472J
R 707		RD1/4PU471J
R 709		RS1/16S104J
R 710		RS1/16S104J
R 712		RS1/16S103J
R 713		RS1/16S122J
R 714		RS1/16S122J
R 716		RD1/4PU102J
R 717		RS1/16S472J
R 718		RS1/16S473J
R 719		RS1/16S223J
R 720		RS1/16S473J
R 721		RS1/16S473J
R 722		See Contrast table
R 723		See Contrast table
R 724		See Contrast table

=====Circuit Symbol and No.	Part Name	Part No.
R 801		RD1/4PU222J
R 802		RD1/4PU222J
R 803		RD1/4PU222J
R 807		RS1/16S472J
R 810		RS1/16S473J
R 811		RS1/16S473J
R 812		RS1/16S222J
R 813		RD1/4PU222J
R 814		RS1/16S223J
R 815		RS1/16S104J
R 816		RS1/16S103J
CAPACITORS		
C 1		CEAL4R7M16
C 2		CKSRYB104K25
C 3		CKSRYB102K50
C 4		CEAL2R2M50
C 5		CKSRYB104K25
C 6		CCSRCH150J50
C 7		CCSRCH150J50
C 9		CCSRCH471J50
C 10		CKSRYB473K50
C 104		CKSRYB102K50
C 105		CKSRYB223K50
C 106		CKSRYB103K50
C 107		CKSRYB223K50
C 108		CKSRYB223K50
C 110		CKSRYB103K50
C 111		CKSRYB223K50
C 112		CEAL221M10
C 113		CKSRYB104K25
C 115		CKSRYB473K50
C 116		CKSRYB103K50
C 117		CKSRYB224K10
C 118		CKSRYB105K10
C 119		CKSRYB473K50
C 120		CKSRYB472K50
C 121		CKSRYB103K50
C 122		CEAL100M16
C 123		CEAL100M16
C 124		CCSRCH101J50
C 125		CKSRYB473K50
C 126		CCSRCH101J50
C 127		CCSRCH101J50
C 128		CEAL220M16
C 129		CCSRCH7R0D50
C 130		CCSRCK2R0D50
C 131		CCSRCH5R0C50
C 132		CKSRYB473K50
C 133		CKSRYB472K50
C 134		CKSRYB473K50
C 136		CKSRYB473K50
C 137		CCSRCH471J50
C 138		CCSRCH561J50
C 139		CKSRYB104K25
C 140		CEAL470M16
C 141		CKSRYB102K50
C 145		See Contrast table

=====Circuit Symbol and No.	Part Name	Part No.
C 146		See Contrast table
C 150		See Contrast table
C 301		CEAL220M16
C 302		CEAL220M16
C 401		CKSRYB105K10
C 402		CKSRYB105K10
C 403		CKSRYB105K10
C 404		CKSRYB105K10
C 405		CKSRYB224K10
C 406		CKSRYB224K10
C 407		CKSRYB224K10
C 408		CKSRYB224K10
C 409		CKSRYB104K25
C 410		CEAL470M16
C 411		CEAL100M16
C 413		CKSRYB105K10
C 414		CKSRYB105K10
C 415		CKSRYB103K50
C 416		CKSRYB103K50
C 417		CKSRYB472K50
C 418		CKSRYB472K50
C 421		CEAL2R2M50
C 422		CEAL2R2M50
C 423		CKSRYB222K50
C 424		CKSRYB222K50
C 427		CKSQYB474K16
C 428		CKSQYB474K16
C 429		CKSQYB474K16
C 430		CKSQYB474K16
C 431		CKSQYB474K16
C 432		CKSQYB474K16
C 433		CKSQYB474K16
C 434		CKSQYB474K16
C 437		CCSRCH100D50
C 438		CCSRCH100D50
C 439		CCSRCH100D50
C 440		CCSRCH100D50
C 500		CKSRYB104K25
C 501	3300 μF/16V	CCH1018
C 502		CKSQYB474K16
C 503		CKSQYB474K16
C 504		See Contrast table
C 506		See Contrast table
C 508		CEAL100M16
C 509		CEAL330M10
C 511		See Contrast table
C 700	470 μF/16V	CCH1331
C 701		CKSRYB103K50
C 702		CKSRYB103K50
C 703		CEAL470M16
C 704		CEAL101M10
C 705		CKSRYB103K50
C 706		CEAL101M10
C 709		CKSRYB102K50
C 712		See Contrast table
C 714		See Contrast table
C 715		See Contrast table
C 716		CKSRYB103K50
C 801		CKSQYB104K50
C 802		CCSRCH101J50

=====Circuit Symbol and No.	Part Name	Part No.

B Unit Number : CZW5525 (KEH-P4020/XM/UC)
(KEH-P4022/XM/EE)
CZW5528 (KEH-P4025/XM/ES)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	900	IC	PD6340A
IC	901	IC	See Contrast table
D	901	LED	CL195PG
D	902	LED	CL195PG
D	903	LED	CL195PG
D	904	LED	CL195PG
D	905	LED	CL195PG
D	906	LED	CL195PG
D	907	LED	CL195PG
D	908	LED	CL195PG
D	909	LED	CL195PG
D	910	LED	CL195PG
D	911	LED	CL195PG
D	912	LED	CL195PG
D	913	LED	CL195PG
D	914	LED	CL195PG
D	915	LED	CL195PG
D	916	LED	CL195PG
D	917	LED	CL195PG
D	918	LED	CL195PG
D	919	LED	CL195PG
D	920	LED	CL195PG
D	921	LED	NSCWS405T
D	922	LED	NSCWS405T
D	923	Diode	HZM6R2ZWA
LCD	900	LCD	CZA5561
X	901	Ceramic Resonator 4.97MHz	CSS1422

RESISTORS

R	900		RS1/10S122J
R	901		RS1/10S122J
R	902		RS1/10S122J
R	903		RS1/10S122J
R	904		RS1/10S152J
R	905		RS1/10S152J
R	906		RS1/10S122J
R	907		RS1/10S122J
R	908		RS1/10S152J
R	909		RS1/10S152J
R	910		RS1/10S122J
R	911		RS1/10S122J
R	912		RS1/10S152J
R	913		RS1/10S152J
R	914		RS1/10S152J
R	915		RS1/10S152J
R	916		RS1/10S222J
R	917		RS1/10S222J
R	918		RS1/10S222J
R	919		RS1/10S222J
R	920		RS1/10S222J
R	921		RS1/10S222J
R	929		RS1/16S222J
R	930		RS1/16S222J
R	932		See Contrast table
R	933		See Contrast table
R	934		See Contrast table
R	935		RS1/16S100J
R	936		RS1/16S393J
R	951		RA2S471J
R	952		RA2S471J

CAPACITORS

C	901		CKSRYB104K25
C	902		CKSQYB225K10
C	903		See Contrast table
C	904		CKSRYB104K25
C	905		CKSRYB104K25

C Unit Number : CZW5526
Unit Name : Panel PCB Unit

MISCELLANEOUS

S	851	Push Switch (EJECT)	CSG1112

RESISTORS

R	851		RS1/16S221J

D Unit Number : EWM1042
Unit Name : Deck Unit

MISCELLANEOUS

IC	251	IC	HA12229F
IC	351	IC	BA6923FP

RESISTORS

R	271		RS1/16S183J
R	285		RS1/16S0R0J
R	301		RS1/16S163J
R	302		RS1/16S163J
R	303		RS1/16S163J
R	304		RS1/16S163J
R	362		RS1/8S301J
R	401		RS1/16S153J
R	402		RS1/16S332J
R	403		RS1/16S911J
R	404		RS1/16S274J

CAPACITORS

C	251		CKSRYB391K50
C	252		CKSRYB391K50
C	253		CKSRYB391K50
C	254		CKSRYB391K50
C	255		CKSRYB103K50
C	256		CKSRYB103K50
C	271	1μF/50V	ECH0002
C	272		CKSRYB104K16
C	301		CKSRYB104K16
C	302		CKSRYB104K16
C	351		CKSQYB224K25
C	352		CKSRYB472K50
C	353		CKSRYB103K50
C	354		CKSRYB103K50
C	355		CKSQYB104K50

=====Circuit Symbol and No.	===Part Name	Part No.
C 401		CKSRYB392K50
C 402		CKSRYB334K10
C 403		CKSRYB223K25
C 404		CKSRYB103K50
C 405		CKSRYB333K16

E Unit Number : EWM1044
Unit Name : Sensor Unit

Q	101	Photo-reflector	EGN1004
S	101	Switch(LOAD)	ESG1007
S	102	Switch(MODE)	ESG1007
L	101	Inductor	CTF1546
L	102	Inductor	CTF1546

=====Circuit Symbol and No.	===Part Name	Part No.
Miscellaneous Parts List		
M 1	Motor Unit(MAIN)	EXA1621
M 2	Motor Unit(SUB)	EXA1580
HD 1	Head Assy	EXA1589

CONTRAST TABLE of TUNER AMP UNIT

KEH-P4020/XM/UC,KEH-P4022/XM/EE and KEH-P4025/XM/ES have the same cuntruction except for the following:

Symbol and Description		Part No.		
		KEH-P4020/XM/UC	KEH-P4022/XM/EE	KEH-P4025/XM/ES
IC500	IC	TA8277H	TA8277H	PAL007A
Q706	Transistot	2SA1703	2SA1703	Not used
Q707	Transistot	2PB709A	2PB709A	Not used
Q708	Transistot	DTA124EK	DTA124EK	Not used
Q711	Transistot	DTC114EK	DTC114EK	Not used
D502	Diode	11ES2	11ES2	Not used
D503	Diode	11ES2	11ES2	Not used
D504	Diode	11ES2	11ES2	Not used
D505	Diode	11ES2	11ES2	Not used
D506	Diode	11ES2	11ES2	Not used
D507	Diode	11ES2	11ES2	Not used
D508	Diode	11ES2	11ES2	Not used
D509	Diode	11ES2	11ES2	Not used
D709	Diode	1SS133	1SS133	Not used
R15		RS1/16S473J	Not used	Not used
R18		Not used	RS1/16S473J	RS1/16S473J
R507		Not used	Not used	RS1/16S0R0J
R722		RS1/2PMF102J	RS1/2PMF102J	Not used
R723		RS1/16S223J	RS1/16S223J	Not used
R724		RS1/2PMF102J	RS1/2PMF102JT	Not used
C145		CKSRYB473K50	CKSRYB333K50	CKSRYB473K50
C146		CKSRYB473K50	CKSRYB333K50	CKSRYB473K50
C150		CKSRYB332K50	CKSRYB562K50	CKSRYB332K50
C504		Not used	Not used	CKSQYB104K50
C506		CKSRYB473K50	CKSRYB473K50	Not used
C511		CKSQYB224K25	CKSQYB224K25	Not used
C712		CEAL3R3M50	CEAL3R3M50	Not used
C714		CEALR10M50	CEALR10M50	Not used
C715		CKSRYB473K50	CKSRYB473K50	Not used

CONTRAST TABLE of KEYBOARD UNIT

KEH-P4020/XM/UC,KEH-P4022/XM/EE and KEH-P4025/XM/ES have the same cuntruction except for the following:

Symbol and Description		Part No.		
		KEH-P4020/XM/UC	KEH-P4022/XM/EE	KEH-P4025/XM/ES
IC901	IC	Not used	Not used	TSOP4840SB1
R932		RS1/16S473J	RS1/16S473J	Not used
R933		Not used	Not used	RS1/16S122J
R934		Not used	Not used	RS1/16S2R2J
C903	10μF/10V	Not used	Not used	CCH1349

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Upper Case(not shown)

1.Remove the Upper Case.

● Removing the Cassette Mechanism Module(Fig.1)

① Remove the four screws and then remove the Cassette Mechanism Module.

● Remove the Grille Assy(Fig.1)

② Remove the two screws.

Disconnect the two stoppers and then remove the Grille Assy.

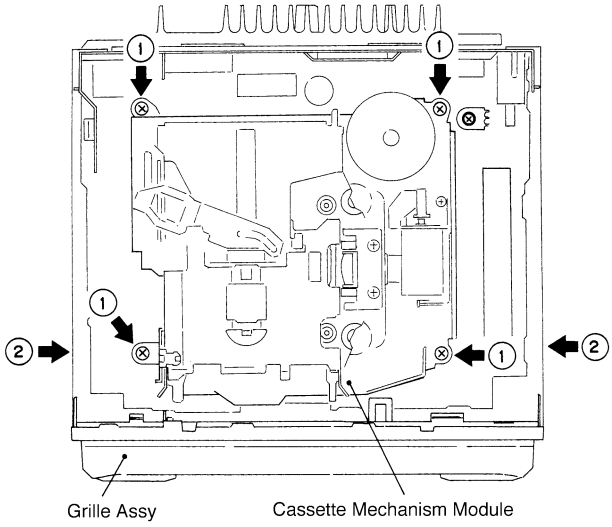


Fig. 1

● Removing the Tuner Amp Unit(Fig.2)

① Remove the three screws.

② Remove the screw.

③ Unbend the three claws and then remove the Tuner Amp Unit.

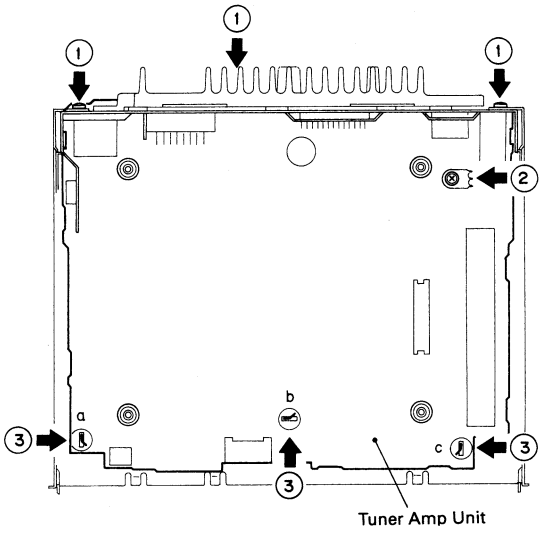
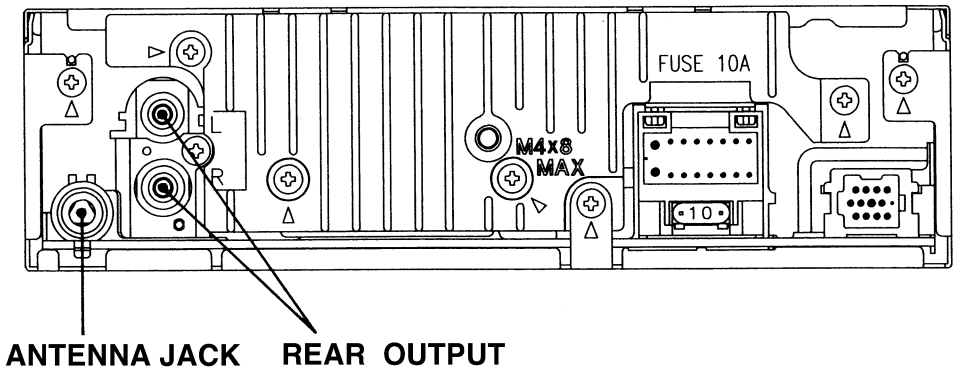
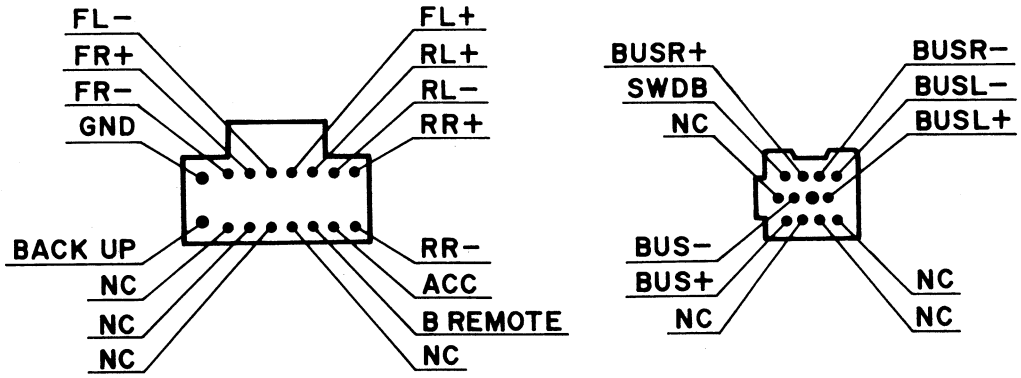


Fig. 2

7.1.2 CONNECTOR FUNCTION DESCRIPTION

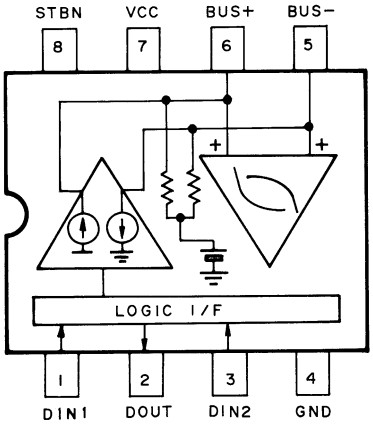




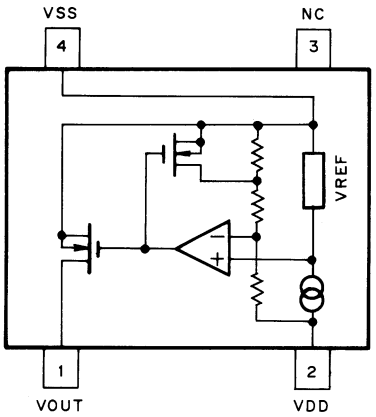
7.2 PARTS

7.2.1 IC

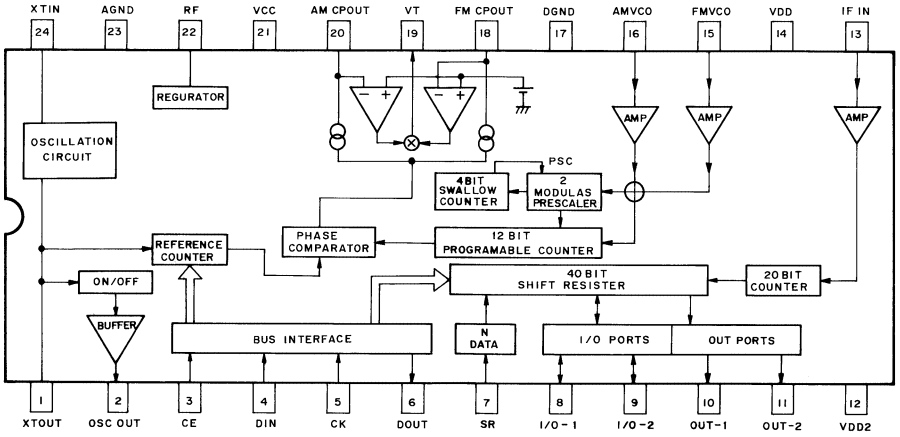
CA0008AM



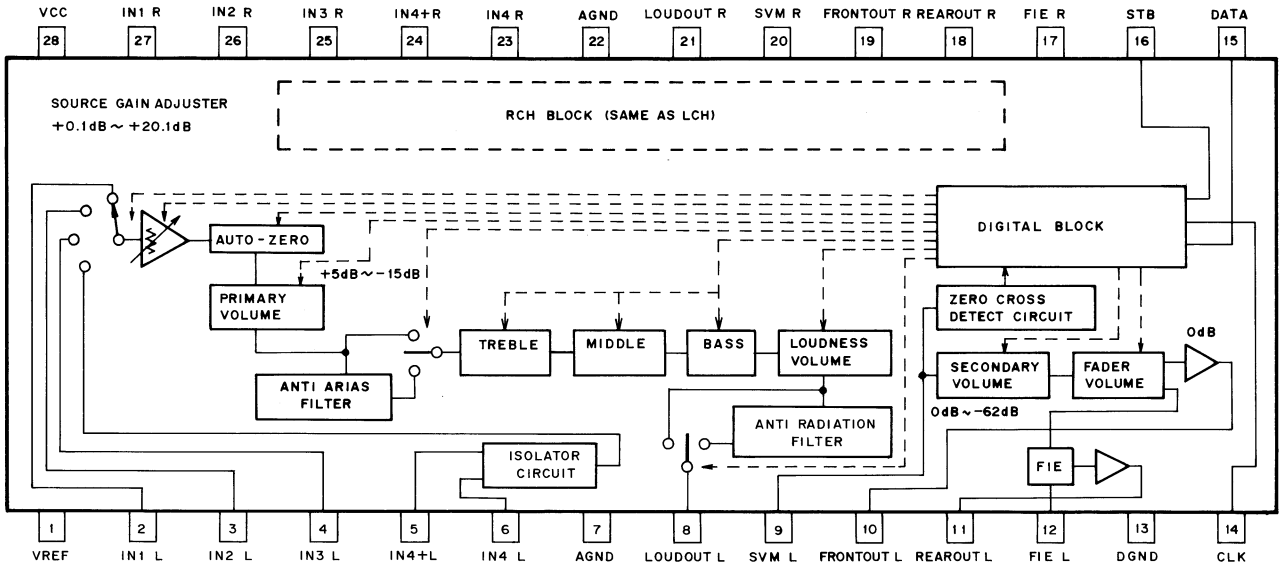
PST3434UL



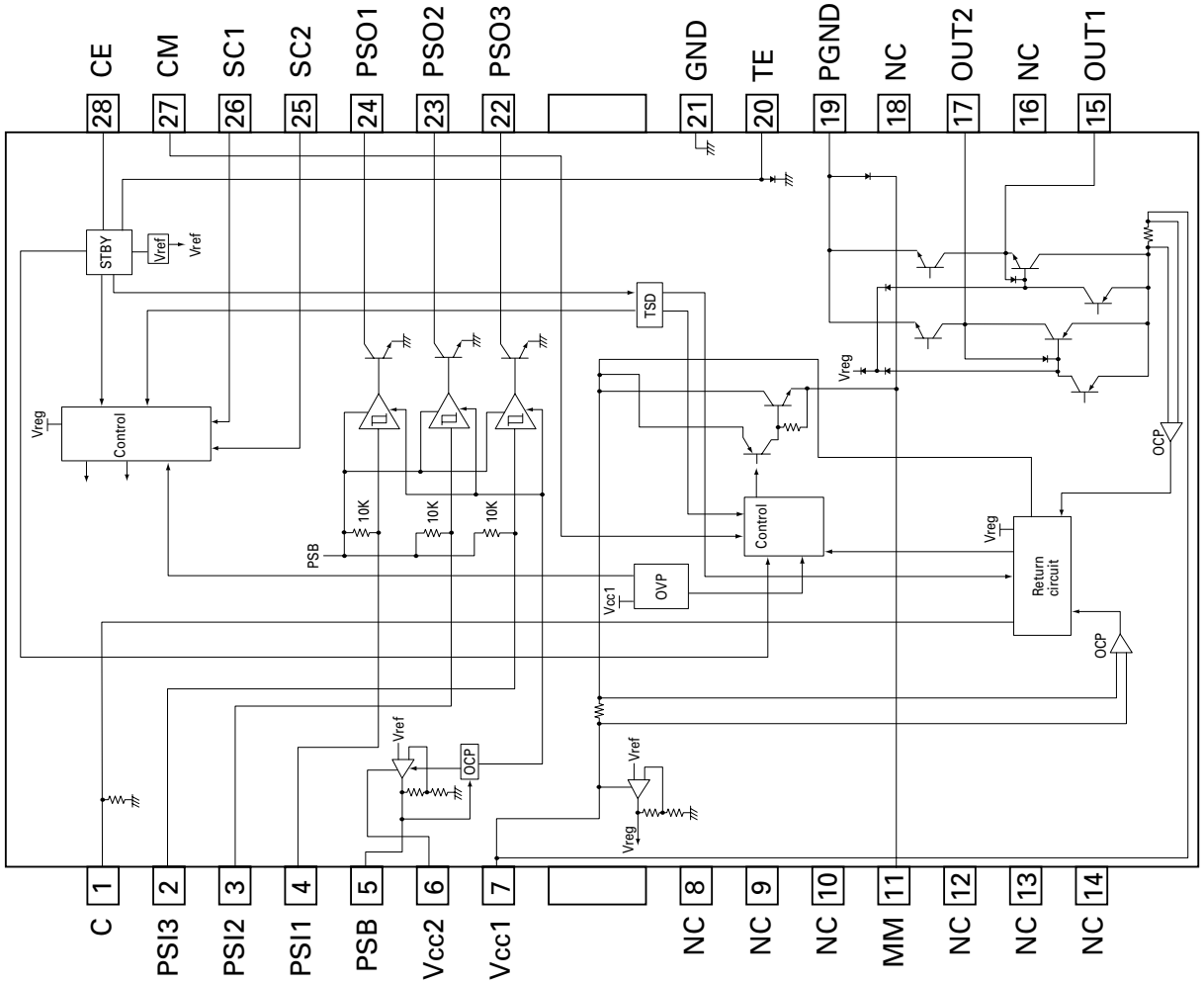
TB2118F



PML003AM

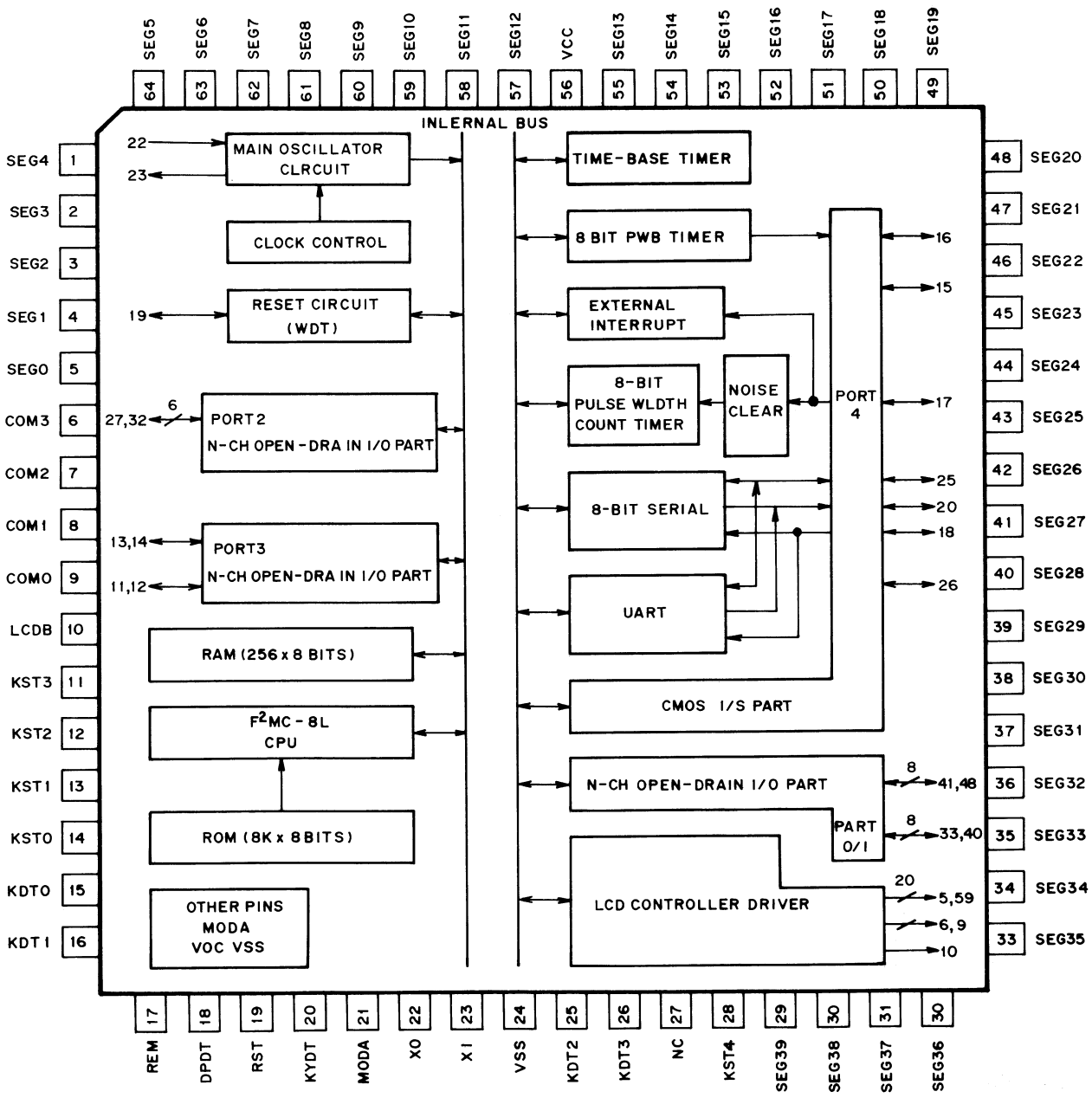


BA6923FP



IC's marked by * are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction

*PD6340A

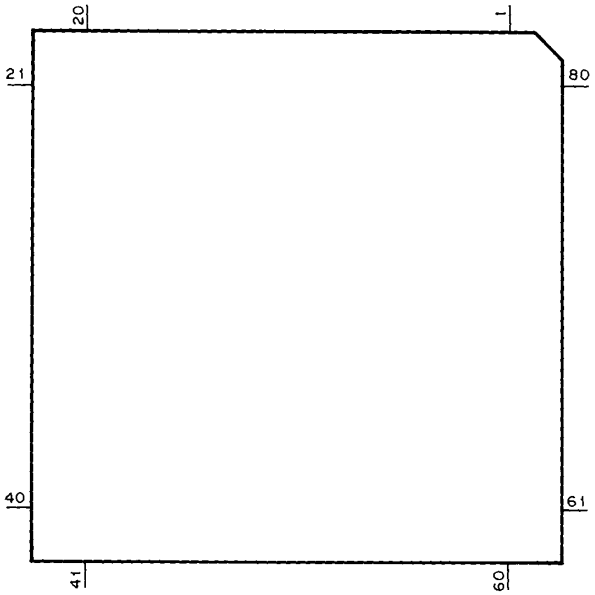


● Pin Functions(000974240)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	SD	I		SD signal input
2	ST	I		FM stereo input
3	ADPW	O	C	A/D converter power supply control output
4	AVSS			GND
5	MUTE	O	C	System mute output
6	NC			Not used
7	AVREF1	I		A/D converter reference voltage terminal
8	KYDT	I		Display data input
9	DPDT	O	C	Key data output
10	NC			Not used
11	TUNPDI	I		PLL IC data input
12	TUNPDO	O	C	PLL IC data output
13	TUNPCK	O	C	PLL IC clock output
14	TUNPCE	O	C	PLL IC chip enable output
15-16	NC			Not used
17	TX	O	C	IP BUS data output
18	NC			Not used
19	VST	O	C	Strobe pulse output for electronic volume
20	VDT	O	C	Data output for electronic volume
21	VCK	O	C	Clock output for electronic volume
22	CM	O	C	Cassette mechanism capstan motor control output
23	SC2	O	C	Cassette mechanism sub motor control output 2
24	F/R	O	C	Cassette mechanism tame direction output
25	PLAY	O	C	Cassette mechanism MS gain select output
26	RIMUTE	O	C	Tape mute output
27	SC1	O	C	Cassette mechanism sub motor control output 1
28	STBY	O	C	Cassette mechanism drive IC control output
29	MSIN	I		Cassette mechanism MS sense input
30	LOADSW	I		Cassette mechanism loading switch input
31	POS	I		Cassette mechanism position sense input
32	NES	I		Cassette mechanism normal sense input
33	VSS1			GND
34	TUON	O	C	TUNER power control output
35	FM/AM	O	C	"FM/AM band select pin ""H"" : AM ""L"" : FM"
36-37	NC			Not used
38	SWVDD	O	N	Grille chip enable output
39	EJECTS	I	N	Eject key input
40-42	NC			Not used
43	FLAPILM	O	C	Flap illumination output
44	ILMPW	O	C	Illumination power supply control output
45-48	NC			Not used
49	PCL	O	C	Clock adjustment output
50-52	NC			Not used
53	SYSPW	O	C	System power output
54	B.REM	O	C	System power ON/OFF output
55-57	NC			Not used
58	ASENBO	O	C	Slave power supply control output
59	IPPW	O	C	Power supply control output for IP BUS interface IC
60	RESET	I		Reset input
61	RX	I		IP BUS data input
62	NC			Not used
63	DSENS	I		Grille detach sense input
64	NC			Not use
65	ASENS	I		ACC power sense input
66	BSENS	I		Back up power sense input
67	VSS0			GND
68	VDD1			Power supply
69	X2			Crystal oscillator connection pin
70	X1	I		Crystal oscillator connection pin
71	IC			(GND)
72	XT2			Not used
73	TESTIN	I		Test program mode input
74	VDD0			Power supply
75	AVREF0	I		A/D converter reference voltage terminal
76	SL	I		Signal level input
77	MODELIN	I		Model select input
78	NC			Not used
79	CSENS	I		Flap open/close sense input
80	NC			Not used

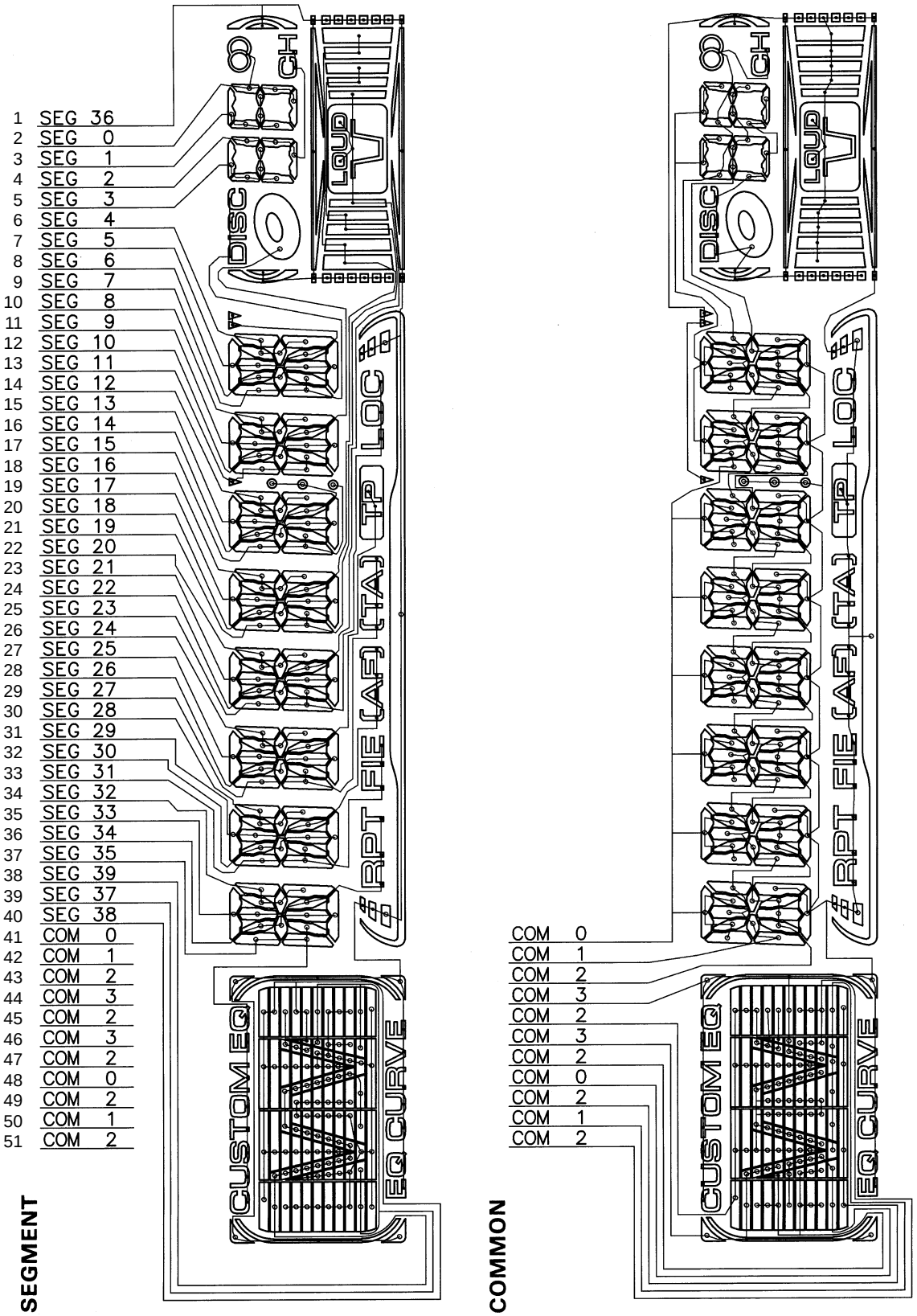
Format	Meaning
C	C MOS
N	N Channel open drain

*000974240

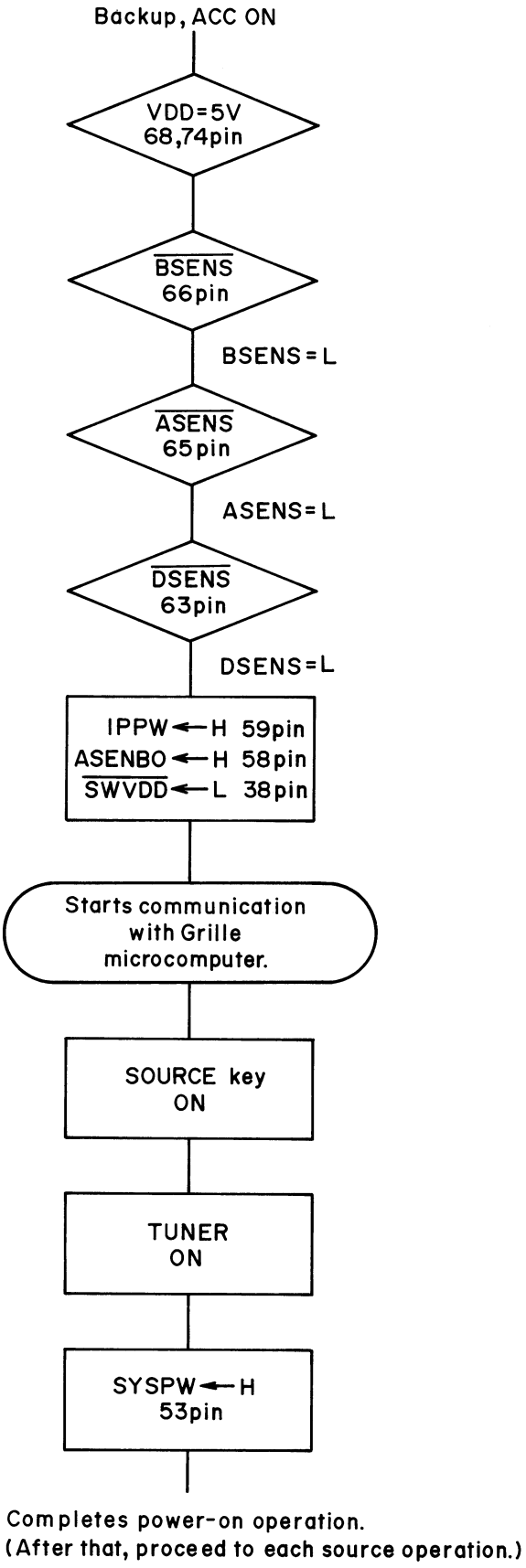


7.2.2 DISPLAY

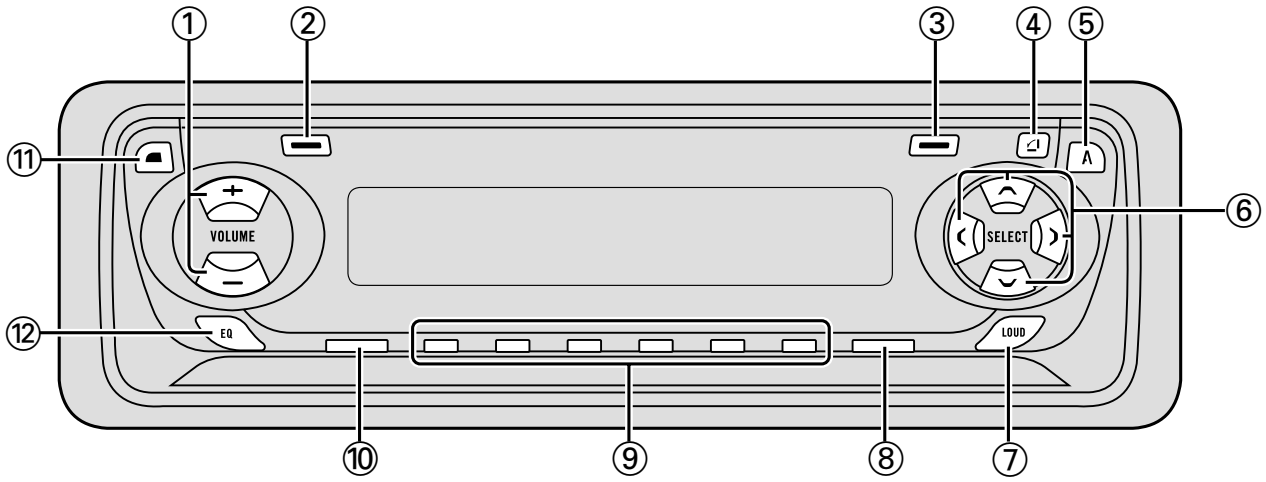
● **CZA5561**



7.3. OPERATIONAL FLOW CHART



8. OPERATIONS AND SPECIFICATIONS



What's what

① VOLUME button
Press to increase or decrease the volume.

② LOCAL button (tuner)
Press to switch local function on or off.
PAUSE/SCAN button
Press to switch pause function on or off.
Press and hold for two seconds to switch scan function on or off.

③ BSM button (tuner)
Press and hold for two seconds to switch BSM function on or off.
REPEAT/RANDOM button
Press to switch repeat function on or off.
Press and hold for two seconds to switch random function on or off.

④ OPEN button
Press to open the front panel.

⑤ AUDIO button
Press to select various sound quality controls.

⑥ ▲/▼/◄/► buttons
Press to do manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions.

⑦ LOUDNESS button
Press to switch loudness function on or off.

⑧ BAND button
Press to select among three FM and one AM band and cancel the control mode of functions.

⑨ 1–6 (PRESET TUNING) buttons
Press for preset tuning and disc number search when using a multi-CD player.

⑩ SOURCE button
This unit is switched on by selecting a source. Press to cycle through all of the available sources.

⑪ CLOCK button
Press to switch clock display on or off.

⑫ EQ button
Press to select various equalizer curves.

Turning the unit on

Press SOURCE to turn the unit on.
When you select a source the unit is turned on. ▣

Selecting a source

You can select a source you want to listen to. To switch to the cassette player, load a cassette tape in this unit

Press SOURCE to select a source.
Press SOURCE repeatedly to switch between the following sources:
CD player (one disc only)—Tuner—Cassette player—Multi-CD player—External unit—AUX

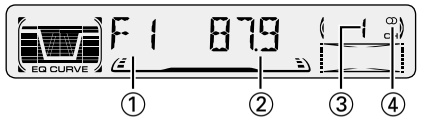
Notes

- In the following cases, the sound source will not change:
  — When a product corresponding to each source is not connected to this unit.
  — When no cassette is set in this unit.
  — When no magazine is set in the multi-CD player.
  — When the AUX (external input) is set to off
- External Unit refers to a Pioneer product (such as one available in the future) that, although incompatible as a source, enables control of basic functions by this product. Only one External Unit can be controlled by this product.
- When this unit's blue/white lead is connected to the car's auto-antenna relay control terminal, the car's antenna extends when this unit's source is switched on. To retract the antenna, switch the source off. ▣

Turning the unit off

Press SOURCE and hold for at least one second to turn the unit off. ▣

Listening to the radio



① BAND indicator
Shows which band the radio is tuned to, AM or FM.

② FREQUENCY indicator
Shows to which frequency the tuner is tuned.

③ PRESET NUMBER indicator
Shows what preset has been selected.

④ STEREO (◯◯) indicator
Shows that the frequency selected is being broadcast in stereo.

1 Press SOURCE to select the tuner.

2 Use VOLUME to adjust the sound level.
When you press VOLUME up/+, the volume is raised and when pressed down/–, the volume is lowered.

3 Press BAND to select a band.
Press BAND until the desired band is displayed, F1, F2, F3 for FM or AM.

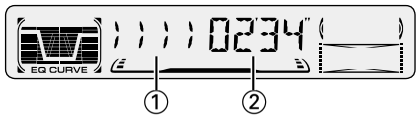
4 To perform manual tuning, press ◄ or ► with quick presses.
The frequencies move up or down step by step.

5 To perform seek tuning, press and hold ◄ or ► for about one second and release.
The tuner will scan the frequencies until a broadcast strong enough for good reception is found.
• You can cancel seek tuning by pressing either ◄ or ► with a quick press.
• If you press and hold ◄ or ► you can skip broadcasting stations. Seek tuning starts as soon as you release the buttons.

Note

• When the frequency selected is being broadcast in stereo the STEREO (◯◯) indicator will light. ▣

Playing a Tape

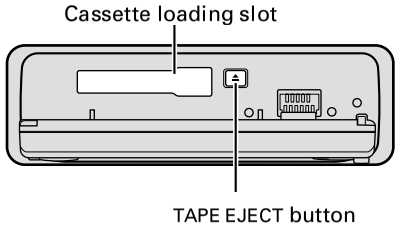


① TAPE DIRECTION indicator
Shows the direction of the tape transport.

② PLAY TIME indicator
Shows the elapsed playing time of the current track.

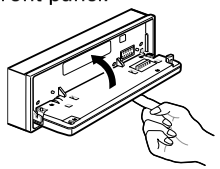
1 Press OPEN to open the front panel.
Cassette loading slot appears.

2 Insert a cassette tape into the cassette loading slot.
Playback will automatically start.



• You can eject a cassette tape by pressing TAPE EJECT.

3 Close the front panel.



• After a cassette tape has been inserted, press SOURCE to select the Cassette player.

4 Use VOLUME to adjust the sound level.
When you press VOLUME up/+, the volume is raised and when pressed down/–, the volume is lowered.

5 To perform fast forward or rewind, press ◄ or ►.
FF or REW appears in the display.
• To cancel fast forward or rewind and return to playback, press BAND.
• You can cancel fast forward or rewind by pressing ◄ or ► in the same direction twice.

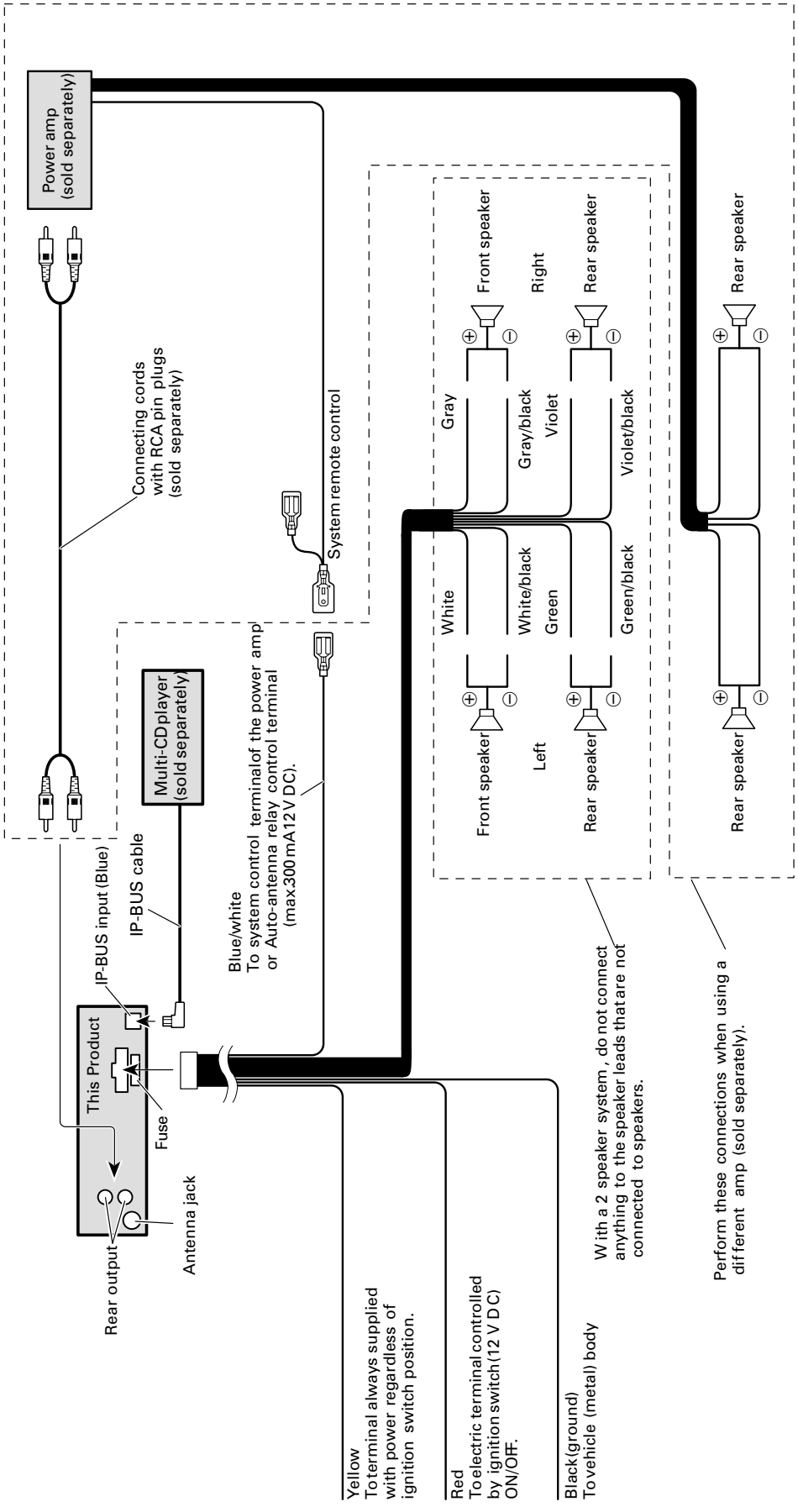
6 To perform forward or rewind music search, press ◄ or ► twice.
F-MS (forward music search) or R-MS (rewind music search) appears in the display. The cassette player will fast forward or rewind to the next or previous blank spot on the tape and begin to play.
• To cancel music search and return to playback, press BAND.
• You can cancel music search by pressing ◄ or ► in the same direction again.

7 To change the direction of the tape transport, press BAND.

Notes

• Do not insert anything other than a cassette tape into the cassette loading slot.
• PLAY TIME indicator starts from 00'00" in the following cases:
— When a tape is inserted
— When the tape direction is changed
— When you rewind the tape to the beginning
• PLAY TIME indicator is halted when fast forward, rewind or music search is operating. ▣

● **CONNECTION DIAGRAM**



Specifications(KEH-P4022/XM/EE)

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 8.5 A
Dimensions (W × H × D):
Chassis ..... 178 × 50 × 157 mm
Nose ..... 188 × 58 × 20 mm
Weight ..... 1.4 kg
Backup current ..... 2.9 mA

Audio

Maximum power output 45 W × 4
Continuous power output 20 W × 4 (DIN 45324, +B=14.4 V)
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Preout max output level/output impedance ..... 2.2 V/1 kΩ
Equalizer (3-Band Equalizer):
(LOW) .....Level : ±12 dB
(MID) .....Level : ±12 dB
(HIGH) .....Level : ±12 dB
Loudness contour
(LOW) .....+3.5 dB (100Hz), +3dB (10 kHz)
(MID) .....+10 dB (100Hz), +6.5dB (10 kHz)
(HIGH) .....+11 dB (100Hz), +11dB (10 kHz) (volume : -30 dB)

Cassette player

Tape ..... Compact cassette tape (C-30 – C-90)
Tape speed ..... 4.76cm/sec.(+0.14cm/sec., -0.05cm/sec)
Fast forward/rewinding time ..... Approx. 100 sec (C-60)
Wow & flutter ..... 0.09% (WRMS)
Frequency response ..... 30 – 16,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio ..... 61 dB (IEC-A network)

FM tuner

Frequency range ..... 87.5 – 108.0 MHz
Usable sensitivity ..... 11 dBf (1.1 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity 17 dBf (2.2 µV/75 Ω, mono)
Signal-to-noise ratio ..... 58 dB (IEC-A network)
Distortion ..... 0.5% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 24 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range ..... 531 – 1,602 kHz (9 kHz)
530 – 1,640 kHz (10 kHz)
Usable sensitivity ..... 20 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)
50 dB (±10 kHz)

Note

- Specifications and the design are subject to possible modifications without notice due to improvements. ▣

Specifications(KEH-P4020/XM/UC)

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 8.5 A
Dimensions (W × H × D):
(DIN)
Chassis ..... 178 × 50 × 157 mm (7 × 2 × 6-1/8 in)
Nose ..... 170 × 58 × 20 mm (6-3/4 × 2-1/4 × 3/4 in)
(D)
Chassis ..... 178 × 50 × 162 mm (7 × 2 × 6-3/8 in)
Nose ..... 170 × 46 × 15 mm (6-3/4 × 1-3/4 × 5/8 in)
Weight ..... 1.4 kg (3.08 lbs)
Backup current ..... 2.9 mA

Audio

Continuous power output is 20 W per channel min. into 4 ohms, both channel driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output 45 W × 4
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Preout max output level/output impedance ..... 2.2 V/1 kΩ
Equalizer (3-Band Equalizer):
(LOW) .....Level : ±12 dB
(MID) .....Level : ±12 dB
(HIGH) .....Level : ±12 dB
Loudness contour
(LOW) .....+3.5 dB (100Hz), +3 dB (10 kHz)
(MID) .....+10 dB (100Hz), +6.5 dB (10 kHz)
(HIGH) .....+11 dB (100Hz), +11 dB (10 kHz) (volume : –30 dB)

Cassette player

Tape ..... Compact cassette tape (C-30 – C-90)
Tape speed .....4.76cm/sec.(+0.14cm/sec., -0.05cm/sec)
Fast forward/rewinding time ..... Approx. 100 sec (C-60)
Wow & flutter ..... 0.09% (WRMS)
Frequency response ..... 30 – 16,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio ..... 61 dB (IHF-A network)

FM tuner

Frequency range ..... 87.9 – 107.9 MHz
Usable sensitivity ..... 11 dBf (1.1 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity 17 dBf (2.2 µV/75 Ω, mono)
Signal-to-noise ratio ..... 58 dB (IHF-A network)
Distortion ..... 0.5% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 24 dB (at 65 dBf, 1 kHz)
Selectivity ..... 71 dB (2 ACA)
Three-signal intermodulation (desired signal level) .....47 dBf (two undesired signal level: 100 dBf)

AM tuner

Frequency range ..... 530 – 1,710 kHz (10 kHz)
Usable sensitivity ..... 20 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±10 kHz)

Note

- Specifications and the design are subject to possible modifications without notice due to improvements. ▣

Specifications(KEH-P4025/XM/ES)

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 10.0 A
Dimensions (W × H × D):
(DIN)
Chassis ..... 178 × 50 × 157 mm
Nose ..... 188 × 58 × 20 mm
(D)
Chassis ..... 178 × 50 × 162 mm
Nose ..... 170 × 46 × 15 mm
Weight ..... 2.3 kg
Backup current ..... 2.3 mA

Audio

Continuous power output is 22 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output 50 W × 4
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Preout max output level/output impedance ..... 2.2 V/1 kΩ
Equalizer (3-Band Equalizer):
(LOW) ..... Level : ±12 dB
(MID) ..... Level : ±12 dB
(HIGH) ..... Level : ±12 dB
Loudness contour
(LOW) .....+3.5 dB (100 Hz), +3 dB (10 kHz)
(MID) .....+10 dB (100 Hz), +6.5 dB (10 kHz)
(HIGH) .....+11 dB (100 Hz), +11 dB (10 kHz) (volume : –30 dB)

Cassette player

Tape ..... Compact cassette tape (C-30 – C-90)
Tape speed ..... 4.76cm/sec.(+0.14cm/sec., -0.05cm/sec)
Fast forward/rewinding time ..... Approx. 100 sec (C-60)
Wow & flutter ..... 0.09% (WRMS)
Frequency response ..... 30 – 16,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio ..... 61 dB (IEC-A network)

FM tuner

Frequency range ..... 87.5 – 108.0 MHz
Usable sensitivity ..... 11 dBf (1.1 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity 17 dBf (2.2 µV/75 Ω, mono)
Signal-to-noise ratio ..... 58 dB (IEC-A network)
Distortion ..... 0.5% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 24 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range ..... 531 – 1,602 kHz (9 kHz)
530 – 1,640 kHz (10 kHz)
Usable sensitivity ..... 20 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)
50 dB (±10 kHz)

Note

- Specifications and the design are subject to possible modifications without notice due to improvements. ▣